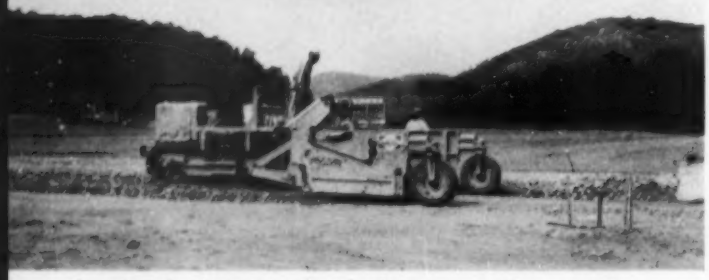
The American City

FEBRUARY 1955

How the three-stage expansion of the facilities for public gatherings in Long Beach, Calif., will appear when completed. The model shows the new Recreation and Exhibit Hall and the existing Municipal Auditorium which it will adjoin; the new relocated bandstand; and how the rebuilt lagoon will look with its walks and landscaping.

(See pages 120-121)

New Ford plant has paved area equal to 20-mile Asphalt highway



Spreading broken stone for the base course of pavement at new Ford assembly plant in Mahwah, N. J.

Applying hot Texaco Asphalt Cement under pressure to the broken stone base course.

Laying wearing surface of plant-mixed Texaco Asphaltic Concrete on asphalt-penetrated base.

The Ford Motor Company's new assembly plant at Mahwah, N. J., will supply the heavy demand for Fords in and around New York City. Everything about the plant is "king size," including the yardage of paving required for its parking areas and roads—sufficient to pave a highway 24 feet wide and 20 miles long.

On parking areas, Ford constructed a 6-inch stone base, penetrated with 1.6 gallons of hot Texaco Asphalt Cement per square yard, topped by a 1½-inch plant-mixed Texaco Asphaltic Concrete wearing surface.

On the plant's roads, the 6-inch stone base was penetrated with 1.75 gallons of asphalt per square yard topped by two layers of Texaco Asphaltic Concrete with a combined thickness of 2½ inches.

Choice of an asphalt base and asphalt surface gives Ford a completely *flexible* pavement, which maintains full contact with the supporting subgrade, despite any subsequent settlement of the latter. In terms of pavement performance, this flexibility results in the ability to withstand traffic impact years longer, plus a lower maintenance cost.

Whether your own paving problem involves a road, street, airport or parking area, look into the variety of solutions offered by Texaco Asphalt Cements, Cutback Asphalts and Slow-curing Asphaltic Oils. Helpful information on all types of asphalt construction is supplied in two free booklets, which our nearest office will be glad to send you.

Contractor
SAMUEL BRAEN CONSTRUCTION CO.,
Wyckoff, N. J.

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Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO

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FEBRUARY 1955

The American City

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Saves $35 Deposit

"My telephone call to a vacation resort to change reservation on apartment saved the $35 deposit I would have lost."

Saves Days of Anxiety

"A telephone call quickly gave me the condition of my nephew after a major operation. I would have been wondering for days."

Saves Pure-bred Cow

Telephone call brought veterinarian in a hurry. "Without it," says farmer's wife, "I would have lost a pure-bred cow."

Saves $10 on Children's Coats

"The telephone helped me save $10 by taking advantage of a sale. I couldn't have left the children to go downtown."

How much Time and Money does the Telephone save for YOU?

A little while ago we left a questionnaire with some housewives and asked them to record the many ways the telephone helps them save time and money. Just a few of hundreds of answers are printed above.

It's true that the telephone saves far more than it costs. But its day-by-day value goes beyond time and money. It serves in so many other ways . . . in friendship, happiness and peace of mind.

BELL TELEPHONE SYSTEM

Reminding you that someone, somewhere, would like to hear your voice today

Charging Out-of-Town Motorists for Parking Given Free to Residents

Village Clerk Albert E. Hart, of Lawrence, N. Y., has referred to me your question as to a court case affecting the right of that village to give free service to local residents in its municipally operated parking lot, but to charge out-of-town motorists for the parking privilege.

The case which you mention in your letter was in the District Court of the County of Nassau, entitled *People* v. *Kraushaar*. At that time, the ordinance of the Village of Lawrence provided for a license to park in a designated parking area adjacent to the Lawrence station of the Long Island Railroad Company. It imposed a fee of $1 a year upon all residents and taxpayers of the village, and upon nonresidents in a specified area adjacent to the railroad station, who would normally have occasion to use it. The fee for all other nonresidents was $10 a year. The District Court upheld the power of the village to charge nonresidents at a different rate from that charged to residents and taxpayers of the village. The Court held, however, that the village had no power to discriminate between different classes of nonresidents, and on that ground struck down the ordinance.

Although it seems to me that in this particular case the classification of the two groups of nonresidents had a reasonable basis, and that the Court was wrong in striking down the ordinance, the Board of Trustees did not consider the matter sufficiently important to justify an appeal. Instead, the ordinance was amended so as to require a fee of $1 a year for all residents and taxpayers of the

village, and a fee of $5 a year for all nonresidents. The parking space has been operated on this basis without question for the last five years.

EDWARD S. BENTLEY
Law Offices of Conklin & Bentley
20 Exchange Pl., New York 5, N. Y.

On Freeways To Downtown

I was interested in the article, "A Critical Look at Freeways to Downtown Areas." [See THE AMERICAN CITY for January, p. 153.] I think the author of it has a great deal of merit to his propositions, and I know that the pressure for freeways in the Milwaukee area has come principally from the construction industry and from suburban residents, who want to come downtown quickly and also to leave quickly.

There has been some city support for freeways because the suburban residents are making our city streets dangerous and are destroying our residential districts, but I do not feel that with the present design of automobiles that we will ever be able to save our cities and allow all of the automobiles to come into the downtown that want to come there. Sometimes I believe that the American city is doomed between the automobile and the airplane, and I think I will do a piece on it sometime.

FRANK P. ZEIDLER, *Mayor*
Milwaukee, Wis.

Action on New Haven's Redevelopment Program

In the December 1953 edition of THE AMERICAN CITY (page 129), you were good enough to run a story about the Chamber's Ten-Point Program for the redevelopment of New Haven.

As a follow-up to this article, I thought you would be interested in seeing a copy of our September 1954 *News Letter*, which announces the appointment by the Mayor of a Citizens Action Commission. This Commission has the responsibility of putting into action the joint program of the Chamber, the City Plan Commission, and the Urban Redevelopment Agency. All three programs are in full accord.

The Citizens Action Commission gives official backing to the program. The Oak Street Connector, referred to as Item No. 8 in the Chamber Program, has now been assured since the announcement by the State Highway Commissioner, G. Albert Hill, that the state will build the highway at its expense as far as Howe Street. As a result, added impetus has been given to the progress and many property transfers in the area to be redeveloped are being announced.

W. ADAM JOHNSON
Executive Vice-President
New Haven Chamber of Commerce

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Down time is no joke. The best way to avoid it is to insist on *genuine* CAT* parts every time. That's the only way to be sure of getting parts that are made to the latest design, precisely manufactured of the right materials, rigidly inspected and tested.

Take these two fuel injection pumps, for example.

They look alike. The genuine part is Caterpillar-built: plunger and barrels of finest ball-bearing type steels, the clearance between them held to 25-millionths of an inch, the finished pump pre-set and tested at the factory, calibrated for use interchangeably with different cylinders in different engines. The substitute part: who can be sure?

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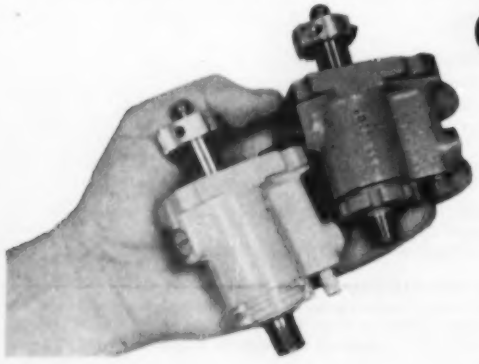

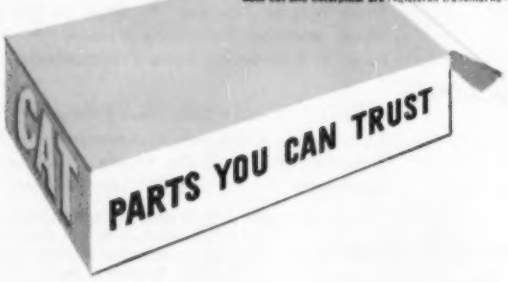

MAIL BAG *(continued)*

(See also "More Letters to The Editor," page 173)

Subdivision Planning—Stubs for Cul-de-sacs

As one with past experience of a good many years as member and chairman of the planning commission of a rapidly growing suburb, I was interested in the discussion in your January 1955 number, pp. 148-9, on "Subdivision Redesign Pays Off."

Our planning commission frowned on cul-de-sacs and emphasized constant watchfulness to compel developers to provide stubs to be later connected with other stubs so as to provide through connections to arteries laid out on the master plan.

There was a constant pressure to approve cul-de-sacs, partly because families with young children strongly preferred houses located on them and partly because developers generally bought small tracts, often widely separated from other tracts that were in line for later development, and they could squeeze out another lot or two if no stubs for future road connections were provided. The planning commission had to employ draftsmen to make hypothetical layouts of future development in order to intelligently prescribe the stubs, and occasionally regretfully yielded the point with the thought that some time in the future a house or two would have to be torn down to permit a connecting street.

THOS. H. WIGGIN
Consulting Engineer

Water Rate Minimum Charges

The article, "Modern Water Rates, Minimum Charges or Service Charges?" is most timely and appropriate. [See THE AMERICAN CITY for January 1955, p. 136.] The minimum charge certainly represents good public relations.

Because of the 1922 recommendations of the American Water Works Association committee, many water agencies still use a service charge. On the other hand, gas and electric utilities most generally have turned to the minimum charge.

The difference in customer reaction to the two methods is amazing. In the '30's I was living in an area served by a large private water company that experienced many complaints about the service charge. With time on everyone's hands (during the depression period) people had ample opportunity to complain.

This company substituted a minimum charge, allowing the phenomenally low amount of only 200 cubic feet (1,500 gallons) per quarter. Complaints almost vanished.

Again, in 1949, a small water company in this area applied to the Board of Public Utility Commissioners for a much-needed increase in rates, with increases both on the service charge and the commodity charge. The public resisted so vigorously that the Board denied the increase. In 1954 the same company applied for an almost identical total increase, but with a minimum charge substituted for the service charge. Opposition was small, and the increase was granted.

Regarding minimum allowances, your suggestion of 2,000 to 3,000 gallons per month is very much in order. My own best figures are almost identical.

Too many agencies charge less than they should for large-sized meters. Perhaps it is timely that all of us should cease to let the local enthusiasm persuade us that industry should get a preferential consideration on charges for large meters. They normally do have the advantage of lower block or step rates, but a large meter that rests in a pit and has little water passing through it generally represents an expensive burden to a water utility unless substantial standby charges are made for it regularly.

CHARLES H. CAPEN, *Chief Engineer*
North Jersey District
Water Supply Commission
Wanaque, N. J.
(Past President, A.W.W.A.)

Fly-Ash Removal

I don't want to appear old fashioned, but I do believe that someone has to come to the defense of the incinerator with an expansion chamber unencumbered by water sprays, ponds, or other devices. I particularly want to take issue with Mr. Benjamin Linsky, Chief of the Smoke Abatement Bureau, at Detroit, Mich., when he says that the settling chamber, or expansion chamber, seems to be "a misnomer, snare, and a delusion." (See "How About Incineration? Some of the Answers," December 1954, p. 148.)

At Darien, we have an incinerator that has been in operation for more than 12 years. Darien is a suburban community with strict standards. It is chiefly residential, and our incinerator lies in the geographic center of town.

We have made no official air-pollution tests of the stack gases, but we do have the record of complaints from our neighbors—zero. We clean the expansion chambers once a week and remove several cubic feet of fly ash at each cleaning. We have no fly ash or dense smoke coming from the chimney. The plant was properly designed and is carefully operated. We control temperatures closely and maintain draft controls for optimum operation at all times.

We are very proud of our plant and hope that any air-pollution control engineer will pay us a visit to see the kind of results we are getting.

WALTER A. BATES
Supt. of Highways and Bridges
Darien, Conn.

Prestressed Concrete

As one of the pioneers in prestressed-concrete bridge construction in the United States, I was interested in the article in the November issue entitled, "Prestressed Concrete Bridges Get Practical" (p. 73). It hardly seems possible that only five years have elapsed since construction work was started on the Walnut Lane Bridge in Philadelphia, a forerunner of this type of bridge construction in this country. (See the December 1949 issue of THE AMERICAN CITY, "Philadelphia Tests First Prestressed Girder, p. 123.)

I agree with Mr. Paxson that prestressed concrete is here to stay, but that its field is not fully defined.

It might be of interest to repeat what I said at the first United States Conference on Prestressed Concrete at the Massachusetts Institute of Technology in 1951, in discussing the Walnut Lane Bridge. ". . . The challenge of American engineers is to take this new technique, developed by our brother engineers in Europe, and to fit it into the tempo of American construction procedures. It is not a cure-all for all concrete problems but is merely another tool which should be added to the design kit of every concrete engineer."

SAMUEL S. BAXTER
Water Commissioner
Philadelphia, Pa.

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Nothing—when you buy a Fischer & Porter Chlorinator. That's true because fool-proof safety features are already engineered into this modern, instrument-type chlorinator.

> The F&P Chlorinator is instrument engineered from top to bottom to be absolutely safe in any emergency—and the safety features respond instantly. The mechanical design—without hydraulic devices to introduce time lag—make this a certainty . . .

In the F&P Chlorinator you can take a hammer and shatter the flowmeter tube—and the chlorinator shuts down *instantly*.

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In the F&P Chlorinator you can shut off the ejector water supply while leaving the chlorine on—and the chlorinator shuts down *instantly*.

In the F&P Chlorinator a simple series of hand manipulations tests each safety component—or shows the reason for malfunctioning should it ever occur.

These safety advantages are yours in the Fischer & Porter Chlorinator. They cost you not one penny more at the outset, since the F&P Chlorinator is lower in first cost. They avoid constant costs of repeated safety tests and checks. They assure you against high costs of repairs and maintenance. We don't put our safety devices under a bell jar—they are right out in the open where you can see and touch them.

These engineered features—*instrument-type engineering*—make the F&P Chlorinator the safest ever built. And you get all these safety features *plus* ease of operation, dependability proven in over 600 operating units, complete corrosion resistance—everything you should have in a chlorinator—and you get them for even less cost in the initial purchase. Write today for full information, details on free trial offer, and *absolute guarantee of satisfaction.*

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18 YEARS SUCCESSFULLY MANUFACTURING CHLORINE CONTROL EQUIPMENT

Sewerage and Sewage Treatment

Storm Relief Sewer

THE northwest section of Erie, Pa., will now benefit from better storm drainage with the installation of a new relief sewer. The line was laid by two Bucyrus-Erie Model 15B units, a ½-yard backhoe, and a clamshell with pipe-hook attachment which hurried along with the job despite the weather.

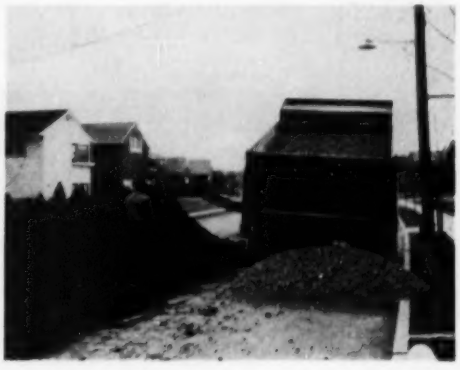
The backhoe cut ditches about 12 feet to 15 feet in depth and 4 feet in width, keeping one Ford dump truck busy on short dumping hauls. The clamshell cleaned out the muddy bottom ditch-dirt, and alternated with a hook to place the 36-inch concrete pipe. The contract for the job ran about $300,000.

Sewers Laid in Muck

SEWERS laid in relatively unstable, tight-grained soil often require extra attention to be sure that they remain firm. In Nassau County, N. Y., the sewers are being laid in a 6-inch bed of gravel to supply them with a solid foundation.

This sewer project is one of several being completed in the county, a New York City suburban area on Long Island. The population of the county passed the 1,000,000 mark last summer and promises to approach a total of 1,500,000 by 1960.

Approximately 180,000 feet of sewer pipe is required for this particular project. The pipe sizes vary from 8 inches to 18 inches in diameter. Most of the sewer excavation is being handled by two Gar Wood Buckeye ladder-type ditchers, as well as by a backhoe, two shovels, and seven cranes.



(Left) The ditcher makes an excavation 2 feet in width and about 8 feet in depth in the muck-like soil. (Right) A truck with a St. Paul hoist and body distributes the gravel used to bed the sewer pipe.

KEEP AN EYE

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AND YOU GIVE HIS EYES

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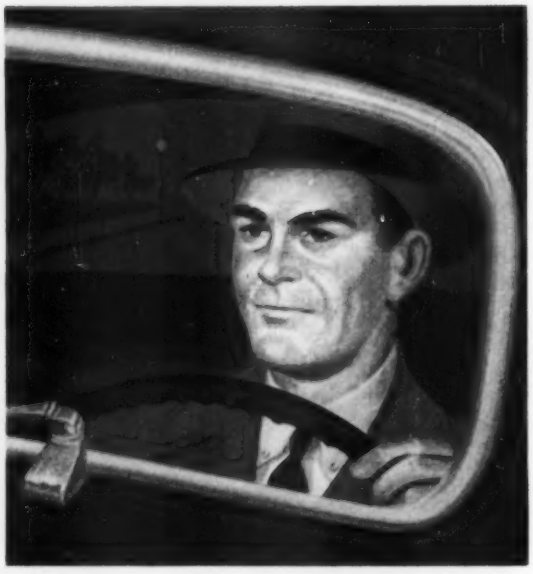
Whether head lights are dimmed or bright, GROTELITE SS provides the extra measure of warning that can be so important! No other reflective sheeting offers such quick recognition . . . has such certain attention value regardless of surroundings. GROTELITE SS is seen quicker . . . can be read clearly at the greatest possible distance!



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are seen farther, seen clearer . . . provide greatest margin of safety!

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For the complete Grote line of reflectorized sheeting, reflectorized or enameled warning and regulatory signs, reflectors and accessories—send for Catalog No. 745-T.

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GROTELITE SS Looks Good After Years of Service! Examinations of GROTELITE signs after years of service show that this highly durable reflective sheeting is still in excellent condition. Because it sheds water, self-cleans in the rain and withstands all extremes of temperature and humidity, these signs still retain their reflectivity . . . are good for many more years of effective service.

GROTELITE SS is available in sheets, precut to size with allowance for trim . . . you pay for no waste. Application is quickly and easily handled without the need for expensive equipment. Four colors: yellow, red, green, and silver (white).

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Notes on Sanitary Fill Operations

Sanitary Fill Makes A Landing Field

REFUSE DISPOSAL and runway extension problems are being solved simultaneously by the City of Morgantown, W. Va., with the construction of a sanitary landfill. When borrow pits adjoining the airport failed to supply enough fill material to extend the airport's north-south runway from 3,600 to 5,600 feet, officials decided to use refuse to make up the balance.

The city uses an International TD14A crawler tractor to spread, compact, and cover the refuse with an 18-inch layer of clean earth at the end of each day's operation. When one fill area has been built up 7 feet, operations begin at another site, permitting the first area to be subjected to natural settling processes.

Recent tests have shown, however, that there is no appreciable settling after compaction. The area did not settle under a test load of 65.9 pounds per square inch, which is equivalent to the load of the tire area on the main wheel of a Douglas DC-4. The operation has received official approval from the CAA.

The work is under the general supervision of Elmer W. Price, who serves as city manager for this city of 26,000.

Airplanes will land here when this big crawler tractor completes its sanitary-fill work at the Morgantown airport.

Scale Model Sanitary Fill

RICHMOND, VA., has constructed a table-model sanitary fill that is doing a good job of public relations. The model permits the city to train employees in the method of operating a fill; it informs officials of other municipal departments, as well as interested private citizens, how the sanitation program operates; and it has been used to good advantage in demonstrating to visiting city officials how the work should be performed.

Joseph E. Garrett, chief of the Division of Street Sanitation, has emphasized, by use of the model, the cleanliness of the work; its freedom from offensive nuisances; its ability to convert waste areas to playgrounds, parking lots, and other useful purposes; and its elimination of dangerous abandoned gravel pits.

Trench-Bottom Unloading

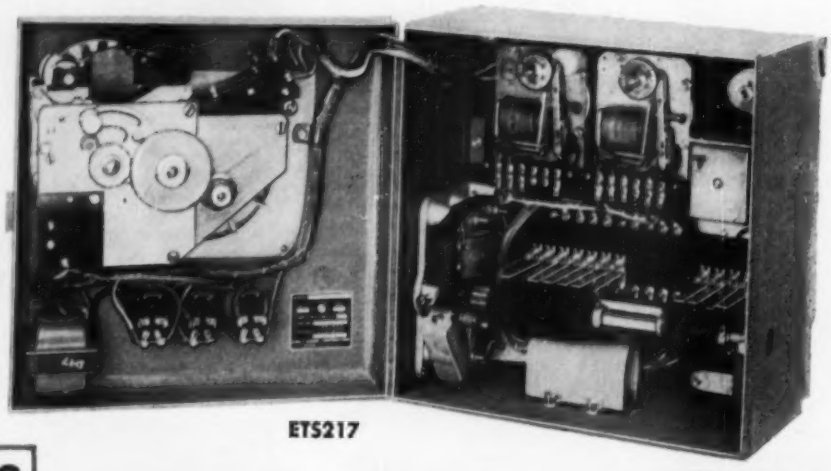
The truck gets right into the bottom of the trench at the Hartsville, S. C., landfill so that paper does not have a chance to blow away before the Caterpillar diesel tractor and shovel can get to work compacting and covering the refuse.

A model study shows the whole story of the sanitary fill to the people of Richmond.

EAGLE

ELECTRO-MECHANICAL
SEMI-ACTUATED CONTROLLER

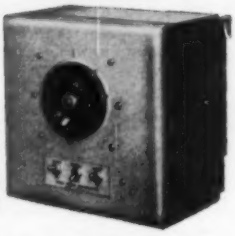
LOOK!
No Tubes



ETS217

OUTSTANDING PERFORMANCE

AND LOWEST MAINTENANCE



For those who prefer motor driven control equipment — here is a completely mechanical vehicle actuated controller where electronic tubes and components have been replaced by simple, rugged industrial type, synchronous motor driven timers. This controller performs all functions of electronic type controls including time extension.

Similar in construction to Eagle pre-timed controllers, the ETS217 is powered by Eagle's heavy duty synchronous disc motor plus time proven industrial timers of Eagle manufacture. Standard controller is furnished with six signal circuits. Space and wiring is provided for 5 additional signal circuits. Additional intervals are provided merely by adding more keys to the timing dial.

1. **No static timing, easily maintained motor driven components.**
2. **All components completely idle during Main Street green dwell period.**
3. **Special color sequences may be added at a fraction of ordinary cost.**
4. **Electrically and mechanically interchangeable with Eagle ET40 and ET41 Semi-Actuated, electronic controllers.**

EAGLE EQUIPMENT SAVES LIVES SAVES TIME

Write for a demonstration of this flexible electro-mechanical controller today.

EAGLE SIGNAL CORPORATION *Moline, Illinois*

Public Safety

Rustless Street-Name Signs for New York City

A NEW street-name sign that is guaranteed not to rust for a long time was announced in New York City early in January 1955. A television shot was made of a sample sign installed January 7 at the corner of the Avenue of the Americas and 49th Street. It was fastened to one of the new Union Metal standards of the outstanding street-lighting installation illustrated and described in THE AMERICAN CITY for November 1954.

Not only are many thousands of dollars invested in the existing street-name signs of New York City, but other thousands are spent annually to maintain them against the inroads of vehicle and factory fumes. Nameplate frames and signs, made of the new material, Tenzaloy, are expected to remain rust-free and shiny for 15 years and are so guaranteed by the Municipal Street Sign Company, Inc., 775 Meeker Ave., Brooklyn 22, N. Y. Tenzaloy is an alloy of aluminum, zinc, and magnesium, developed by the American Smelting and Refining Co., 120 Broadway, New York 5, N. Y.

Examining a new street-name sign and frame are (left to right): E. L. Rimbault, advertising manager, Federated Metals Division, American Smelting and Refining Company; Robert Desmond, Municipal Street Sign Company, Inc., Brooklyn, N. Y.; Edwin Wagner, THE AMERICAN CITY; Diana Kahn, Helen Dimit, and Paul M. Platzman of John Mather Lupton Co., Inc.; and A. Nichamin, Manager of American Smelting's Metals Division Aluminum Department.

Police Training in Madison, N. J.

THIS last year included two months of intensive training for the members of the police force of the Borough of Madison, N. J. (1950 pop. 10,417). The course covered traffic control, motor-vehicle regulation, search and seizure, and general law and regulations, given by the borough attorney, representatives of the Federal Bureau of Investigation, and the State Police. The superior officers also took a course in fingerprinting and photography under the direction of the F. B. I.

Training also was given with the weapons of law enforcement: riot gun instruction, pistol firing, and actual firing of tear gas equipment.

Law enforcement is as important as prevention of crime in police work. Our police department made 123 arrests in addition to the motor vehicle and parking violations, which are the major portions of the total arrests of any town. The detective bureau cleaned up 32 cases of crime this year, some of which dated back for several years. This is the best record in the borough's history.

ALFRED P. SMITH, JR.
Mayor
Borough of Madison, N. J

* * *

CHESTER, PA., has a single civil defense network system integrating Police, Fire, Bus, and Taxi fleets, all equipped with General Electric 2-way radio.

* * *

TO COORDINATE HOUSTON'S municipal radio system, individual systems for the police, fire, and water departments had to be set up. The three frequencies to be used were separated by approximately a megacycle (two of them by LESS than a megacycle). At first the city expected to use one tower with three antennae, but General Electric engineers proved that a single high-gain antenna could give an all-directional signal and do a better job.

* * *

Rescue Boat of the City of Wilmington, N. C.

Members of rescue squad launching city's rescue boat powered by an Evinrude outboard motor. Though manned by firemen, the boat is used also by the Parks and Recreation Department, according to Richard M. Hobbs, Administrative Assistant.

"Lower the Broom" on High Sweeping Costs...

Cleaner sweeps on all types of terrain—high-crown roads, inverted gutters, airports, freeways, etc.

Four-wheel hydraulic brakes for maximum safety. Cab protects against overhanging limbs. Greater visibility for driver.

Sweep more gutter miles per day . . . Maneuver easily around parked cars.

with

MOBIL-SWEEPER

Most For Your Money at Budget Time: Mobil-Sweeper

MANY COMMUNITIES are reporting three times the gutter miles at one-half the cost with MOBIL-SWEEPER—the *modern* machine that sweeps, sprays and carries the full load direct to the dump. Pick-up crews and expensive loading equipment are thus eliminated; more miles of streets are swept cleaner at lower cost.

MOBIL-SWEEPER MAKES STREET SWEEPING A ONE-MAN JOB. This rugged, compact machine likes "tough going"... thrives on tortuous terrain. One *man* sweeps deep, wide gutters, sharp curb returns, steep hills, under low-hanging trees or other obstructions with ease. Right and left gutter brooms sweep dirt, bottles, cans, other trash into the path of the big full-floating pickup broom—leaving a clean 10-ft. swath (7'3" with single broom) behind.

Then, when the 2½ cu. yd. dirt hopper is loaded, the MOBIL-SWEEPER pops off to the dump—at maximum traffic speeds. Less time is wasted "dead-heading" to and from the dump . . . more refuse is picked up and disposed of with fewer stops.

DEPENDABLE OPERATION—MAXIMUM SAFETY. Mobil-Sweeper is teamed with a modifed International Harvester chassis and the famed Silver Diamond valve-in-head engine for better performance, fewer repairs. Four-wheel hydraulic brakes protect pedestrians; a truck-style "Safety Top" cab protects the operator, gives him the visibility—and safety—he needs to do the cleaning job.

For complete information on how Mobil-Sweeper solves your sweeping problems—without creating budget problems...

Write for the facts!

THE CONVEYOR CO. 3260 E. Slauson Ave., Los Angeles 58, Calif. AC-02
Gentlemen: Please send catalog, with complete details and specifications for the Mobil-Sweeper.

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ADDRESS_____
COUNTY_____
CITY_____
STATE_____

CONVEYCO

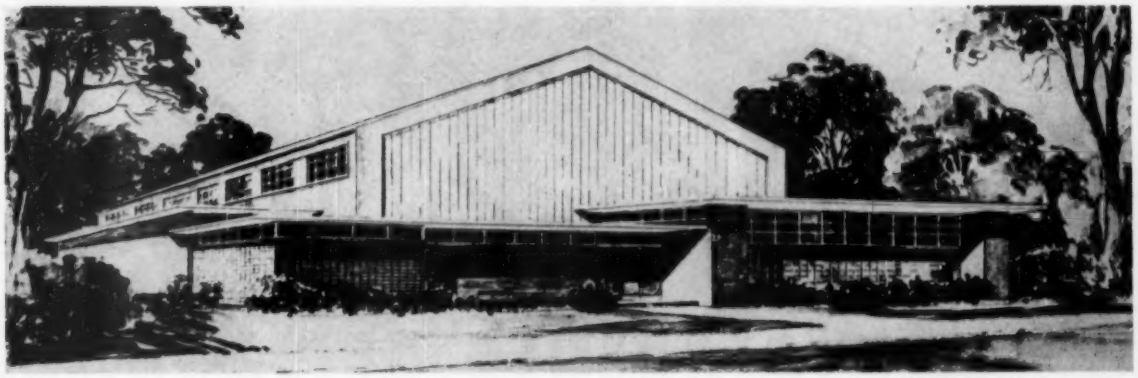
MOBIL-SWEEPER

DIVISION OF THE CONVEYOR CO. • 3260 E. Slauson Avenue, Los Angeles 58, California

Parks & Playgrounds

Edited by JOSEPH PRENDERGAST, Executive Director, National Recreation Association

New Armories to Have Recreation Use in Alabama



Thirty-two armories of the type depicted in this architect's sketch—one in every county in Alabama—are being planned. Some are under construction now, and all of them have been designed for community use as well as National Guard functions.

LOCAL, state, and federal governments are joining in a program which will result in 32 armory buildings, one in every county in Alabama. Each armory will cost approximately $100,000 and will be financed 75% with federal funds and 25% with state funds. Each city is required to deed real estate to the state for the location.

The standard one-unit armory is planned to be readily adaptable to general community use. The assembly area is adequate for indoor basketball and two classrooms can be used for a variety of other activities. Toilet facilities for both male and female are provided.

Very little of the building will be required for full-time National Guard use during the average day. The local National Guard commander at each location is appointed as custodian of the armory and is empowered with full authority to arrange for local community use. State officials have expressed a desire to cooperate to the fullest with local representatives of the community.

Many of the communities where armories are to be located do not have full-time recreation directors, although most of them have part-time recreation programs. In those communities like Sylacauga and Birmingham where there are fine year-round programs, the armories offer possibilities for supplementary use.

Sylacauga already has a centrally located recreation center with an auditorium, and the new armory is being constructed on the edge of town. But in Birmingham the armory will be located in the Ensley section of the city where additional recreation facilities are needed. According to King Sparks, superintendent of parks and recreation, "Meeting places in Ensley Park right now are booked solid." The armory won't be a cure-all for the space shortage, but it is expected to help. It will provide room during the week for athletic events, shower and dressing rooms, and space for groups to meet.

Citizens' Money and Muscle Build Parks

ONE of the things that sets recreation services apart as a distinct municipal function is the close relation between the individual citizen and the recreation operation.

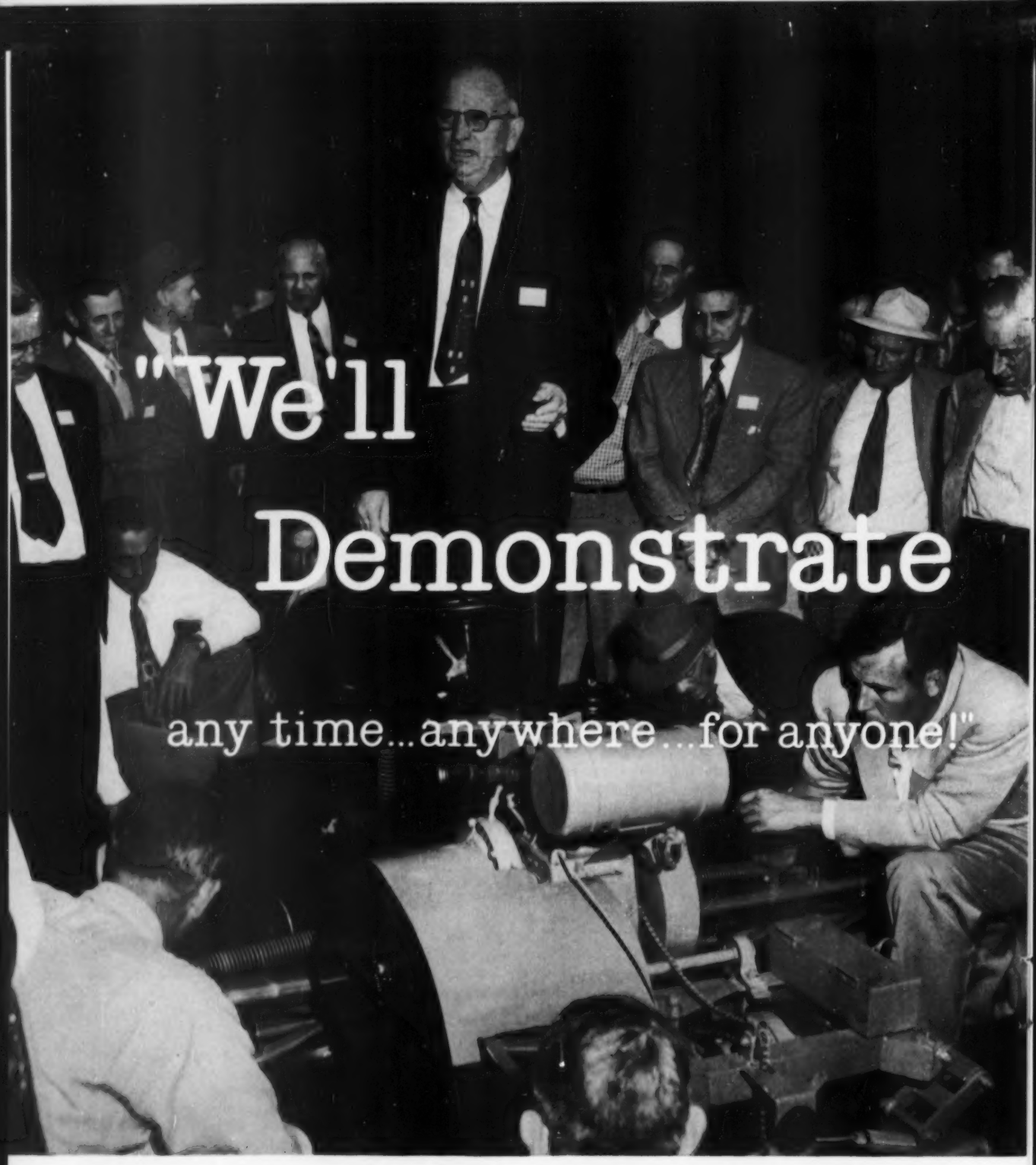
In city after city every year, citizens contribute labor and money over and above their tax payments to build playgrounds, parks, and other recreation areas and facilities. In West Branch, Mich., a beautiful 10½-acre park has been built in the past two and one-half years on land donated to the city. During the past 18 months, donations of labor, equipment, money, materials, and time have been sufficient so that the city paid out only $170 to meet the expenses. A drive is now on to raise this amount in cash contributions.

Cumberland, Md.

In the seven years the recreation department has been in operation, playground associations made up of residents around each neighborhood playground have worked closely with city recreation officials. At one playground, a swampy area adjacent to the existing development was filled in with cinders and fill-dirt by the members of the association. It is now a fine ball field of 75,000 square feet.

At the city's Gephart Playground the neighborhood playground association constructed two concrete tennis courts with curbs for flooding for winter ice-skating. They completely equipped the entire playground with apparatus, erected floodlights for the concrete area, and blacktopped two areas for basketball and general playground apparatus. All of this was done without any financial help from the city recreation department.

One of the major projects of area development involving the financial help of local citizens was the Penn Avenue baseball field. Local contractors donated thousands of dollars worth of time and equipment to convert a rough hilly area into a first-class baseball field



Here's the equipment—

Worthington equipment includes front-wheel-drive, dump body, and hill-hugging standard tractors; fairway and blitzer mowers in 3- to 9-gang combinations (standard and self-lift models) as well as self-powered and power-take-off rotary mowers.

Here's what it does—

Worthington units are designed for heavy-duty mowing on golf courses, parks, highways, estates, cemeteries, airports and institutions. Whatever your mowing problem may be, Worthington has the *right* answer with the *right* equipment.

and here's the offer!—

Worthington Mower Company, through Authorized Dealers, will—with no obligation—survey your mowing needs and demonstrate the right equipment for your requirements at *any time* and *any place*. Just write us—we'll do the rest.

Write for your demonstration, today! **WORTHINGTON MOWER COMPANY**

STROUDSBURG, PENNSYLVANIA

77

with toilets, showers, dressing rooms, concession stand, and ticket office. The cost to the city was about $5,000.

Among other projects completed with the labor of local residents have been six playground shelter houses and a wading pool. Most of the improvements have been made on a sharing basis, with the recreation board and the local playground association participating.

St. Louis Park, Minn.

A Minneapolis suburb, St. Louis Park, offers another example of how people work for the improvement of their own community recreation facilities. Back in 1948 the Recreation Planning Committee, a nongovernment group, recognized the need for a community center. A committee was appointed, plans prepared and contributions solicited. Before the campaigning could get well under way, the Korean War caused the freezing of steel and the committee disbanded.

In 1950 an old church building was for sale for $400. The Park Board purchased it and moved it to park property. In the next two years the building was placed on a foundation, windows installed, plumbing, lights, and heat provided and necessary remodeling completed. The total cost to the village was $10,000.

Contributions were then requested to furnish the building. The St. Louis Park Woman's Club gave $500 for kitchen equipment. Other groups which quickly followed suit were the Lion's Club, the Golden Age Club, the American Legion, War Mothers, the Brookside Garden Club, the Community Fund, the Square Dancers, a number of business firms, and individuals.

The building is now under the operation of a legally constituted Recreation Commission, with representatives from the School Board, Park Board, Village Council, and two at-large. Attendance at the center is expected to average around 4,000 a month during 1955.

Benton County, Wash.

A $10,000 budget provided by the Board of County Commissioners will finance the operation of the new Benton County Park and Recreation Department during 1955. But the development of the new 410-acre county park along the Columbia River will get a lot of real help from civic organizations.

The new superintendent of the department, who was formerly recreation director at Pocatello, Idaho, is John Clark. Under his leadership local organizations are taking responsibility for the development of various areas of the park. A number of the areas are already under development. A professionally prepared layout has been completed for the full park and all work is being done in accordance with it.

Los Angeles Fights Against Encroachment

PROPOSALS of the California State Highway Department to route two new freeways through Los Angeles' Griffith Park have met with vigorous opposition from that city's Park and Recreation Commission.

In order to clearly demonstrate what the proposal would mean to the present park operation, markers were placed every 75 yards along the proposed route through the park. Members of the Commission together with civic leaders toured the route and saw the changes that would result.

Out of a total of less than 1,000 acres of land sufficiently flat for sports and other recreation activities, 126 would be needed for the Golden State Freeway. Among the park facilities that would be demolished were a community clubhouse and baseball diamond, six tennis courts, and a baseball field.

The facilities that would have to be moved include a model airplane flying field, seven fairways on one of the golf courses, an archery range, picnic facilities, the pony ride, and miniature train. In addition, the department's construction and maintenance yards would have to be changed.

After touring the area, the Recreation and Park Commission voted unanimously to request the City Council to join with it in opposing the proposed route through Griffith Park and urged the Council to demand that the State Highway Commission establish an alternate route for the thoroughfare.

Recreation and park officials all over the country are increasingly concerned about the attempts to use public park properties for other public purposes, and even in some instances for private or semiprivate functions. (See THE AMERICAN CITY for October 1954: "A Critical Comment . . .", p. 106.)

Reports from all over the country coming into the office of the National Recreation Association indicate that cities are failing to establish new park areas in proportion to the increase in population and the development of new residential areas. Last year the number of births was the highest in history. With population, time, and money for leisure all increasing at an enormous rate, cities will shortly find themselves in even more critical need for recreation and park space.

Municipal officials who had the foresight to set up a schedule of land acquisition a number of years ago have saved the taxpayers of their communities many thousands of dollars. Acquiring land for recreation purposes before it is "too late" is sound advice offered by older communities.

When members of the new County Park Board in Bucks County, Pa., recently visited the Union County, N. J., park system they were advised to acquire land as soon as possible. Union County officials pointed out that their own 5,000-acre system was acquired largely through planned purchases beginning back in 1923.

New Recreation Appointments

RECREATION Personnel Services of the National Recreation Association announces the following recent municipal appointments:

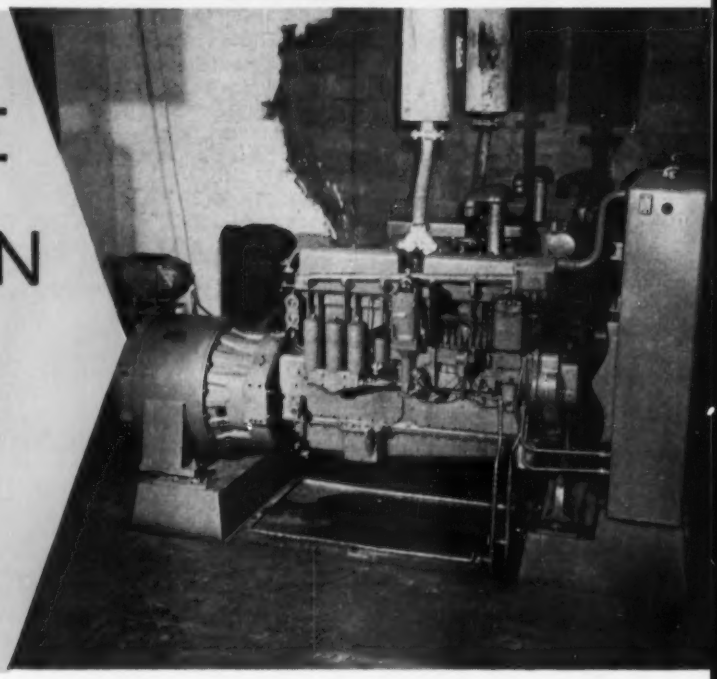
GERALD M. SMITH, formerly Superintendent of Recreation in Merrill, Wis., has been named Superintendent of Recreation, at Menasha, Wis.

WILLIAM H. SLATTENGREN, Superintendent of Recreation, at Springfield, Ohio, was formerly Director of Parks and Recreation in Norwalk, Ohio.

ROBERT H. MILNE, Superintendent of Recreation, at Clayton, Mo., was formerly Director, Camping and Recreation, Winnetka (Ill.) Community House.

BINNION D. PARSONS, Superintendent of Recreation, at Garland, Texas, was formerly Superintendent of Recreation in Alice.

HERE'S WHERE A WHOLE TOWN GETS ITS **POWER**



Offhand, there are two interesting things about the neat little city of Kanopolis, Kansas. It's almost dead-center in the U. S. And it's powered *entirely* by the two CAT* D13000 Diesel Electric Sets you see here.

The citizens of Kanopolis used to depend on another source of power, but it failed them whenever the wind was mean enough to kick dust around—which is often in this dry belt. Harvey E. Merrill and Paul F. Arensman, engineers in charge of the light plant, say, "We figured Cats were the best and most reliable engines we could get." So the city switched. Even Kansas dust can't run the gauntlet of this D13000's multi-step air cleaner.

Dependable 24-hour power is assured by other unique Caterpillar features, too. The crankshaft, for instance, is forged of specially selected steel, its bearing surfaces "Hi-Electro" hardened and finished to mirror-like smoothness. And superior construction like this has paid off for Kanopolis. The two electric sets have operated more than 26,000 hours each, with the down time being limited to one overhaul on each unit.

Another point helped sell the city officials. "We can get parts from only 30 miles away, any time. Even Sundays."

And during Kanopolis' night football season, when the power load jumps over 40%, there's hardly a light flicker in town as these big yellow diesels promptly pick up the extra burden.

Important, too, for economy-minded officials: the Caterpillar fuel system takes low-cost No. 2 furnace oil with no danger of fouling.

Your Caterpillar Dealer has self-regulating diesel electric sets from 20 to 117 KW, externally regulated sizes from 20 to 315 KW. He'll be glad to help you any way he can.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

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WE'VE MADE CLAIMS... NOW MAKE US PROVE THEM

Street Construction & Maintenance

72-Hour-Sidewalk Placement in Downtown Dayton

PRECAST concrete slabs cut the inconvenience to downtown street traffic to a minimum during the reconstruction of sidewalks in portions of the busy business district of Dayton, Ohio. The new sidewalk was back in use 72 hours after the crew began to break up the old walk. The actual cost, furthermore, was approximately 5% less than the estimated cost for the conventional, more time-consuming methods.

On October 12 of last year, the workmen first broke out the deteriorated section. The next day, factory-fabricated Flexicore slabs were delivered to the job site at 8 a.m., and were in place at 10 a.m. Grouting followed immediately, accompanied by the pouring of the fill at the slab ends. Paper cups blocked the slab cores during the pouring. On the third day, the work crews placed the membrane waterproofing required by the city, and poured a 4-inch top slab. When the business day began on the fourth morning, the sidewalk was ready for traffic.

On this job, the slabs bear on existing stone walls. Superimposed load requirement was 350 pounds per square foot. Had the walk been poured by ordinary methods, an additional beam would have been needed.

Directly beneath the sidewalk replacement are two stockrooms of a clothing store. These rooms were always immediately accessible, whereas if the usual methods had been used, the supports would have obstructed the space for two weeks.

Everyone saved when these precast slabs were used for sidewalk rehabilitation in Dayton's busy downtown business area.

Rubber-Tired Equipment Wins Favor

APPROVAL of a new rubber-tired bituminous paver by the Pennsylvania Department of Highways sets a precedent that should lead to the equipment's acceptance by state and municipal groups throughout the United States.

Acceptance was based on tests conducted in Lancaster County by laying what the department identifies as ID-2 binder and surface courses. The new machine has four pneumatic traction wheels; solid rubber steering wheels for dual controls; a long wheel base, designed to provide better leveling action; floating screed regulation by adjustment of screws on either side of the unit; two vibrating tamper bars, which are set just ahead of the screed; and a 4-cubic-yard hopper. Controls for steering, brakes on the drive wheels, and screed lifting are hydraulic.

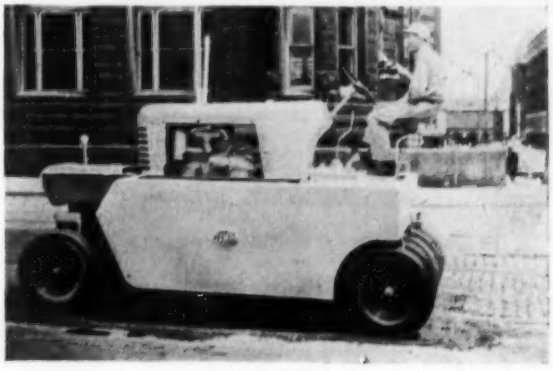
The machine is manufactured by Foote Construction Division, Blaw-Knox Company, Pittsburgh, Pa.

(Above) Pneumatic tires are the newest feature of this asphalt paver at work in Lancaster, Pa. (Below) This rubber-tired self-propelled roller is ideal for Minneapolis.

Self-Propelled Rubber-Tired Roller

MINNEAPOLIS, MINN., too, is enjoying the advantages provided by the superiority of rubber-tired rolling accompanied by the maneuverability of self-propulsion for its current street-surfacing program.

To obtain this double-barreled benefit, the city acquired a new Tampo Model SP9 self-propelled roller and is using it to resurface sections of the city's streets where car tracks have been removed. Working in confined areas, this new type of rubber-tired roller has demonstrated its ability to compact the asphalt surfacing more thoroughly than would be possible with steel-tired equipment, due to the kneading action of the pneumatic tires. The roller is a product of the Tampo Manufacturing Company, of San Antonio, Texas.



Introducing the
WATERSPHEROID

. . . . the shape of things to come in elevated storage

Several years ago, we introduced the Watersphere® — a boldly new type of elevated water tank. Now we are introducing the WATERSPHEROID — a "king-size" version of the Watersphere. Although spheroidal instead of spherical in shape, the Waterspheroid provides all the inherent advantages of the Watersphere — *dependable gravity pressure water supply; striking appearance; minimum surface area to maintain; a base that takes up minimum ground space and yet can be used for storage.*

The Waterspheroid is built in sizes of 300,000, 400,000 and 500,000 gals. Write for complete information on this new structure — the shape of things to come in elevated storage.

The 500,000-gal. Horton Waterspheroid above, is the first ever built. It was erected for municipal service at Northbrook, Illinois.

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Los Angeles • New York • Philadelphia • Pittsburgh • Salt Lake City
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Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

Water Supply & Treatment

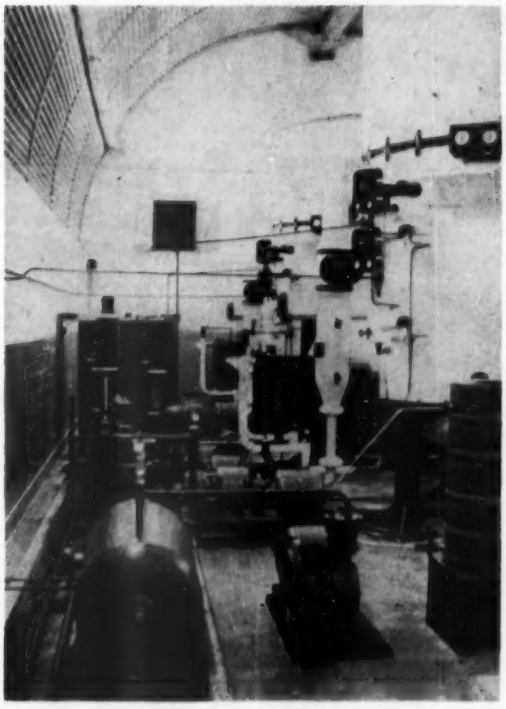
Gates of Sanitation for Washington, D. C.

STORAGE and distribution of filtered water in Washington, D. C., are controlled by the use of huge, cast-iron, bronze-mounted sluice gates. In all, the reservoir uses 11 of these gates. All have heavy-duty wedges on all sides, double-bolted top and bottom, to withstand high, unseating pressure.

Most of the gates, all products of the Rodney Hunt Machine Company of Orange, Mass., measure 6 feet in width and 8 feet in length.

Three of the bronze-mounted sluice gates in the clear-well chamber. The two at right serve the main storage reservoir.

Distilled Sea Water For Gibraltar



The Milwaukee-made Cleaver-Brooks distillation equipment looks perfectly at home inside a Gibraltar rock cavern as it helps supply this British colony with fresh water.

THE famous Rock of Gibraltar now has available distilled sea water to supplement its fresh-water supply.

Formerly, the 21,000 people here relied on wells and on rain water, collected in specially prepared catchment areas and stored in reservoirs. However, these resources proved insufficient to meet the ever-increasing demand. So, early in 1949, Cleaver-Brooks Company was approached by a prominent British water-treatment firm for help in producing a sea-water purification plant. Subsequently, the American firm received an order for two units, each able to produce 1,080 gallons per hour.

The plant is built of nonferrous, corrosion-resistant material, and generally can be expected to produce a gallon of water using 0.035 of a pound of fuel.

Columbus, Ohio Boosts the Pressure

REGARDLESS of how carefully a city plans, certain areas often develop faster than anticipated. The west side of Columbus, Ohio, is an example. The expansion of its residential and commercial areas in recent years has drawn heavy drafts from the water system, severely lowering the pressure.

However, the Department of Public Service has rectified the shortage by putting into operation the city's new Fisher Road Booster Station. This addition houses a battery of five 8-inch horizontal, split-case Weinman Model 12 pumps. Each of these double-suction centrifugal pumps is capable of delivering 2,100 gpm against a head of 90 feet.

The station was designed by the H. G. Dill Company, consulting engineers of Columbus, and the construction was supervised by Marshall Houghn, assistant superintendent of the Division of Water.

Five Weinman Model 12 heavy-duty pumps correct drops in pressure in a rapidly expanding section of Columbus, Ohio.

Completely new or remodeled, today's school buildings require the complete and foolproof protection that the DUALARM System provides.

For more information about this inexpensive yet complete system that safeguards lives and property 24 hours every day, write to:

THE GAMEWELL COMPANY, Newton Upper Falls 64, Mass.

RETURN COUPON FOR FOLDER DESCRIBING THE DUALARM SYSTEM . . .

GAMEWELL®

THE BOX IS POSITIVE

Reduces Human Error

There is no substitute for the Municipal Fire Alarm System

THE GAMEWELL COMPANY
Newton Upper Falls 64, Mass.

Please send the new folder describing the DUALARM System and its operation in today's schools.

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(Please Print)
Firm Name .....
Address .....
City ..... *Zone* . . . *State* .....

Our Municipal Notebook

President Eisenhower Urges Nationwide Policy On Natural Resources

IN HIS State of the Union message to Congress on January 6, the President stressed the importance of joint action of federal, state, and local governments and private citizens in the development of national resources. To quote one paragraph:

> At the foundation of our economic growth are the raw materials and energy produced from our minerals and fuels, lands and forests, and water resources. With respect to them, I believe that the nation must adhere to three fundamental policies: First, to develop, wisely use and to conserve basic resources from generation to generation; second, to follow the historic pattern of developing these resources primarily by private citizens under fair provisions of law, including restraints for proper conservation; and, third, to treat resource development as a partnership undertaking—a partnership in which the participation of private citizens and state and local governments is as necessary as federal participation.

Housing, as the President Sees It

TO QUOTE further from the State of the Union message:

> As part of our efforts to provide decent, safe and sanitary housing for low-income families, we must carry forward the housing program authorized during the past Congress. We must also authorize contracts for a firm program of 35,000 additional public housing units in each of the next two fiscal years. This program will meet the most pressing obligations of the Federal Government into the 1958 fiscal year for planning and building public housing. By that time the private building industry, aided by the Housing Act of 1954, will have had the opportunity to assume its full role in providing adequate housing for low-income families.

Tremendous Scope of Construction Activities

"THE nation's public works activities are tremendous in scope. It is estimated," said the President in his State of the Union message, "that more than 12 billion dollars will be expended in 1955 for the development of land, water, and other resources; control of floods, navigation and harbor improvements; construction of roads, schools and municipal water supplies, and disposal of domestic and industrial wastes. Many of the federal, state, and local agencies responsibile for this work are highly efficient. But public works activities are closely interrelated and have a substantial influence on the growth of the country. Moreover, in times of threatening economic contraction they may become a valuable sustaining force. Efficient planning and execution of the nation's public works require the coordination of federal activities and effective cooperation with state and local governments.

"The Council of Economic Advisers, through its public works planning section, has made important advances during the past year in affecting this coordination and cooperation. To give more emphasis and continuity to this essential coordination, I shall request the Congress to appropriate funds for the support of an Office of Coordinator of Public Works in the Executive Office of the President."

Two New Regional Organizations Proposed

THE CREATION of two new metropolitan area councils, one of municipalities and the other of civic agencies, is proposed for the New York region by Harold Riegelman, counsel to the Citizens Budget Commission, of New York. Speaking at the Commission's 23rd Annual Dinner, at the Hotel Plaza, January 12, Mr. Riegelman said, in part:

"By way of a real start [towards working regionally], I should like to propose for your consideration two working instrumentalities. The first is a continuing Metropolitan Council of Municipalities, consisting of the top elected officers of some 500 municipalities in the Metropolitan Region. The mission of that Council would be to address itself at a local government level to the more pressing and manageable of the regional problems. It would seem appropriate for our City Administration to invite that Council into being for the purpose of exploring the need of such a voluntary body and how best it can function to meet that need.

"The second working instrumentality may well be a Metropolitan Council of Civic Agencies consisting of the citizen leaders of civic and trade associations in each section of the Region. Effective solutions of regional problems depend upon grassroots support, upon acceptance by the people who live and work in the region. The relations between the two Councils should be mutually supporting and mutually suggestive. They should maintain close liaison. It would seem to be appropriate for several of the larger civic organizations in this city together to work out the initial plan for the Metropolitan Council of Civic Agencies, invite the conferees to attend, and organize themselves in ways best suited to the accomplishment of their mission."

Cities Earn Big Sums From Investing Idle Funds

INVESTING idle funds in U. S. government securities continues to net cities big profits, according to the Municipal Finance Officers Association. Current reports from four governmental units show benefits from putting excess cash to work.

Dallas, Texas, gained $451,000 on its temporary investments in 1953 and $419,000 in 1954. Interest collect-

REPRESENTATIVE MUNICIPAL BOND ISSUES

January 1 to January 15, 1955

Date of Sale			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
1/ 5/55	Columbus, Ohio	$ 278,000	New Municipl. Bldg. Fd.	6	2.44
1/ 5/55	Jackson, Miss.	1,830,000	Spec. Street Improvem't	5-1/2	1.733
1/ 5/55	Aplington, Iowa	5,000	Sewer Construction	4	1.67
1/ 6/55	Sheboygan, Wis.	115,000	School	9-2/3	2.11
1/ 7/55	Birmingham, Ala.	280,000	Public Improvement	4	1.6227
1/ 8/55	Luckey, Ohio	5,000	Land and Bldg. Purc'se	2-1/6	2.404
1/10/55	Reno, Nev.	20,705	Special Improvement	5-2/3	2.59
1/10/55	Newton, N. J.	175,000	Sanitary Sewer	10-1/2	2.18
1/10/55	Geddes, N. Y.	11,500	Lakeside Fire Dist.	5-5/6	2.42
1/10/55	Scio, N. Y.	42,000	Building	10-1/6	2.17
1/10/55	Lorain Co., Ohio	118,000	Water & Sewer Imp'm't	6-1/2	1.60
1/11/55	Albany, Ga.	1,500,000	Gas Rev. Anticip't'n	19-1/2	3.18
1/12/55	Douglas Co., Minn.	200,000	Hospital	7-1/2	1.75
1/12/55	Tioga Co., Pa.	130,000	General Obligation	4-5/6	1.794

Compiled from *The Daily Bond Buyer*

ed on surplus cash invested by Fort Worth, Texas, in 91-day U. S. treasury discount bills for the fiscal year ending September 30, 1954 amounted to $104,808.32.

In May 1953, Nassau County, N. Y., began investing proceeds of a $14,000,000 bond issue not immediately needed to pay for construction. Earnings since then to August 15, 1954, from interest received and profits on the sale of U. S. securities has totaled $434,937.81, or nearly $1,000 a day.

The School District of the City and County of Denver, Colo., has followed since 1947 a policy of investing temporarily idle funds. As a result, the city in effect has had the use of a $30,000,000 bond issue interest-free, in the two years since it was approved and sold. Earnings from the district's various fund investments from 1947 to September 30, 1954, have amounted to $2,166,323.60.

Street Tree and Utility Conference to Stress Civic Welfare, Planning

TO DEVISE plans for correcting the bad results of uncoordinated street-tree, street-light, and overhead wire installations, a nationwide Street Tree and Utility Conference will be held March 3 and 4, in Cleveland, Ohio, at the Wade Park Manor Hotel.

Co-sponsors of the Conference are John W. Anderson (Edison Electric Institute), Kirk M. Reid (Illuminating Engineering Society), and Edward H. Scanlon (National Shade Tree Conference).

For program and further information address Mr. Scanlon at Olmsted Falls, Ohio.

New Film Released on Standard Weights

A NEW educational film, entitled *A True Standard*, has been released by the National Bureau of Standards to show the importance of accurate standard weights and precise weighing techniques, and to illustrate certain activities of the federal, state, and local governments in weights and measures administration. Since its establishment in 1901, the National Bureau of Standards has cooperated with the state and local authorities in promoting uniformity in weights and measures throughout the nation.

The running time of the new 16mm, sound, color film is 12 minutes. For information about its loan or sale, write to the Office of Scientific Publications, National Bureau of Standards, Washington 25, D. C.

Asserts Dispersal Best Bomb Protection

HAS the tremendous power of the H-bomb made urban dispersal an obsolete method of assuring that the nation will not be put out of action by an all-out attack on metropolitan centers? According to Donald Monson, a city planner who was formerly a consultant to the Mutual Security Agency, the answer is *no*. Writing in the December 1954 issue of the *Bulletin of the Atomic Scientists*, Mr. Monson asserts his conviction that successful protection could be achieved through a gradual dispersion of all future population and industrial growth in urban areas to new satellite communities at the peripheries of metropolitan areas.

The satellite towns would be at least 20-50 miles from each other and the central city, and they would be built in those areas that a careful study of prevailing wind directions showed not likely to be subjected to the dangerous radioactive "fall out" that follows a bomb explosion. New highway and railroad links would be built to provide circumferential connections between the satellite cities and towns. Finally, the inner and most congested portions of the metropolitan center would be broken into separate neighborhoods or communities by wide park strips containing highways and railroads.

In his analysis, Mr. Monson expresses the belief that his proposal would provide effective protection, could be achieved economically, and would promote a sound long-range metropolitan pattern of living.

Pledges to Mayors Feature 40th Anniversary of Kiwanis International

AN OUTSTANDING feature of the observance of the 40th anniversary of the founding of Kiwanis International on January 21 was the presentation of "Pledges of Rededication" to mayors of U. S. and Canadian cities by Kiwanis presidents. Recognition has been given to the fact that Kiwanis clubs could not do their service work in the communities concerned without the approval and cooperation of the mayors and other officials.

The "Pledges of Rededication" say, in part:

> Kiwanis believes that the continued service rendered to the people of the United States and Canada through local club action is dependent upon the dedication of its membership, the cooperation of leaders in government at all levels, and a growing understanding of the needs of the community, state, province, and nation. Kiwanis International, therefore, through the rededication of each of its individual members, pledges itself to an ever broadening impact upon the needs of the people of the United States and Canada.

A good many Kiwanis clubs have rendered important service to their local communities. Some clubs, upon the request of the mayors concerned, have spark-plugged publicity drives to insure voter approval of worthwhile improvement bond issues. Others have spearheaded clean-up drives; raised funds for street lights, swimming pools, ball parks, band uniforms, etc.

Nationwide Nuclear Congress to Discuss Peacetime Atom Use

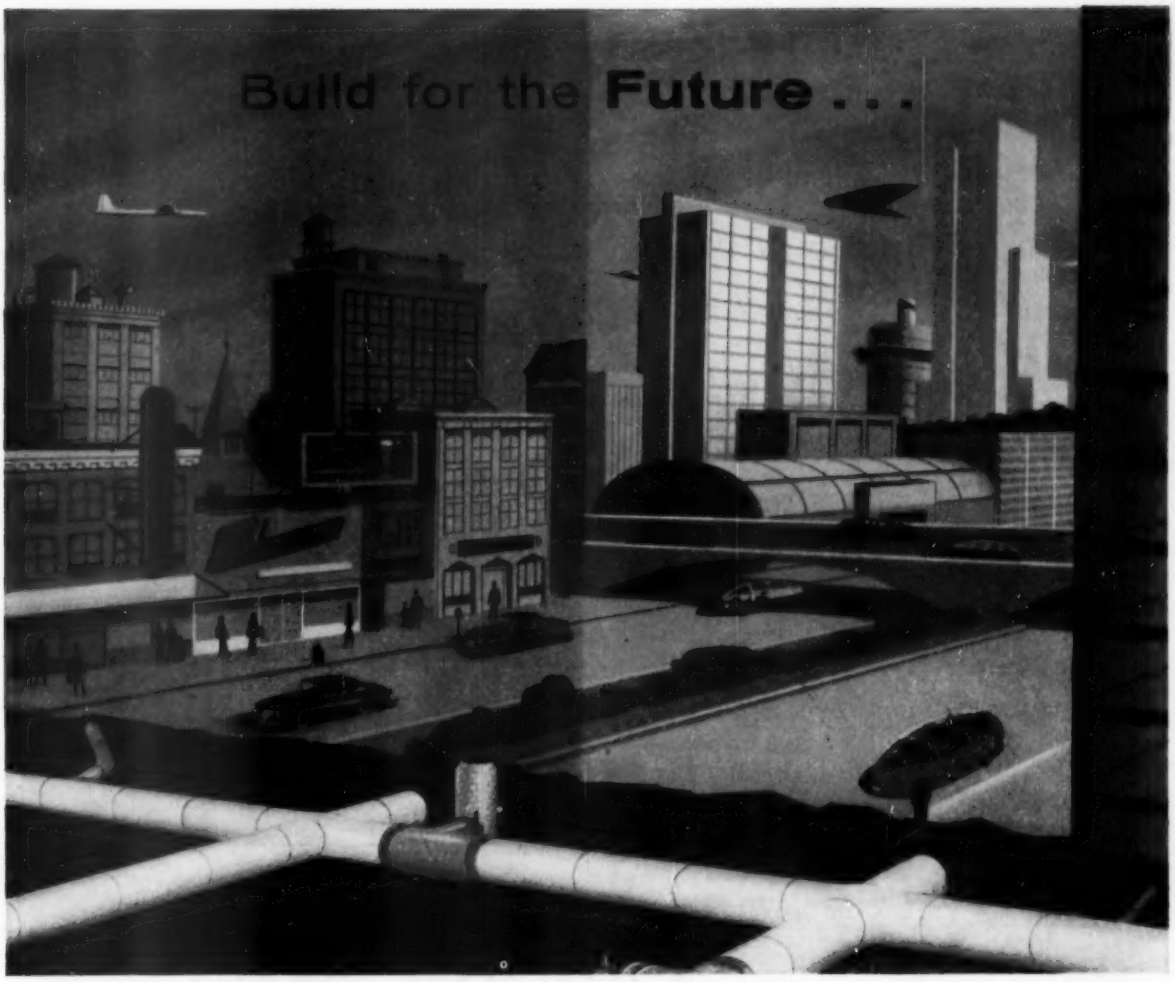
PLANS for a week-long Nuclear Congress and Atomic Exposition to exchange information on the latest techniques for applying atomic energy to peacetime uses were announced by the Engineers Joint Council in New York recently. The Congress, which is expected to attract scientists, engineers, and industrialists from all over the country, will be held in Cleveland, Ohio, December 12-17, 1955.

Twelve of the nation's most important engineering and scientific societies are sponsoring the meeting to push forward the present frontier of knowledge concerning the use of atomic energy for peaceful purposes. Among the sponsoring groups are the American Society of Civil Engineers and the American Water Works Association.

Papers and addresses on nearly 100 technical and management subjects relating to atomic energy will be scheduled. It is expected that among the problems to be discussed will be those of detecting and treating radioactive materials in water supplies and treating radioactive waste products.

Details concerning the Congress may be obtained from the Engineers Joint Council, 29 West 39th Street, New York 18, N. Y.

(Continued on page 27)



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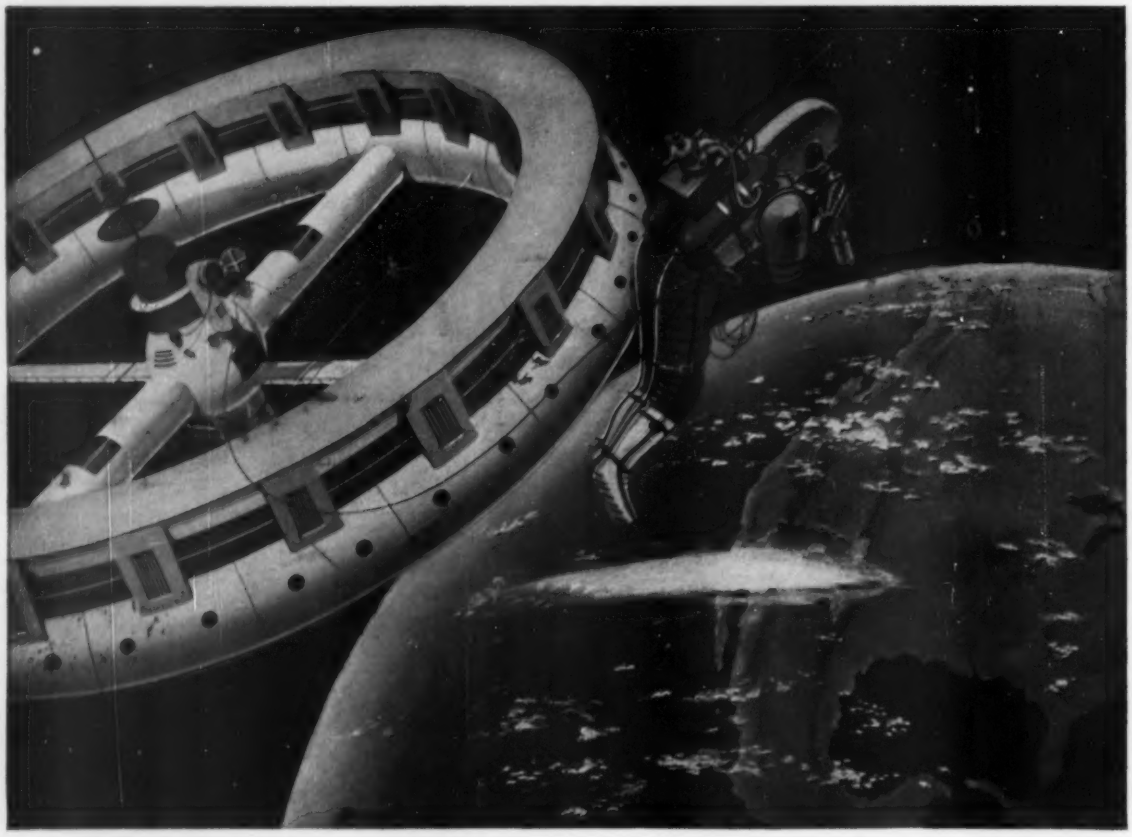

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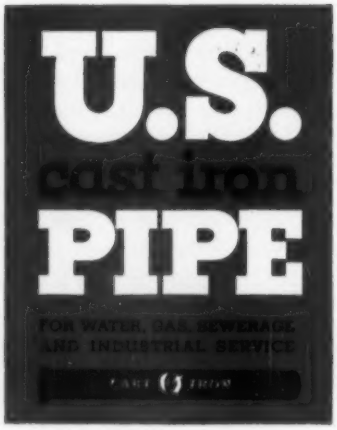

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Local Development Program Benefits from Federal Industrial Dispersion Policy

By KODER M. COLLISON, *Director, Springfield Development Council*
Springfield, Ohio

INDUSTRIAL development in the Springfield, Ohio, metropolitan area is likely to get a boost in the future now that the Office of Defense Mobilization has declared the municipality and its environs a "dispersal area." Since Springfield is well removed from prime military targets and from cities that are heavily populated with workers in key industries, the declaration will help fulfill the federal government's policy of encouraging industrial expansion to take place in less populated areas.

The big reason why Springfield expects increased industrial growth to accompany the declaration is that industries considering a location here can now obtain important tax savings resulting from the rapid plant amortization assistance allowed in dispersal areas. Under this process a new plant may be amortized in five years rather than the normal 20-year depreciation period. This provides a tremendous federal tax saving for industrialists during the period when "working capital" is most needed.

In order to be eligible for rapid tax amortization under the dispersal program, an industry does not necessarily have to be engaged in defense or government production. However, facilities must be such that in the event of mobilization, defense products may be made. Practically all of Springfield's present industries fulfill this requirement.

The Springfield area will benefit from the dispersal designation and from the accompanying inducements to industry in several ways. First of all, new plant investment will, of course, add basic taxable value to the assessment rolls of the municipalities in the area. Secondly, industrial expansion will create additional jobs to help relieve our local unemployment problem. This lack of jobs for more than 6% of our normal working force led the Springfield Development Council to work with the Chamber of Commerce, labor organizations, and city government officials in requesting federal authorities to declare Springfield and its environs a labor surplus area during July 1954.

Now that we are in a dispersal area, the Development Council has concentrated its efforts on the setting aside of tracts of ground for the exclusive use of industry. This has resulted in the zoning for industrial use of 1,000 acres of land lying 1½ miles north of the city limits. The area will be known as the Mad River Industrial District.

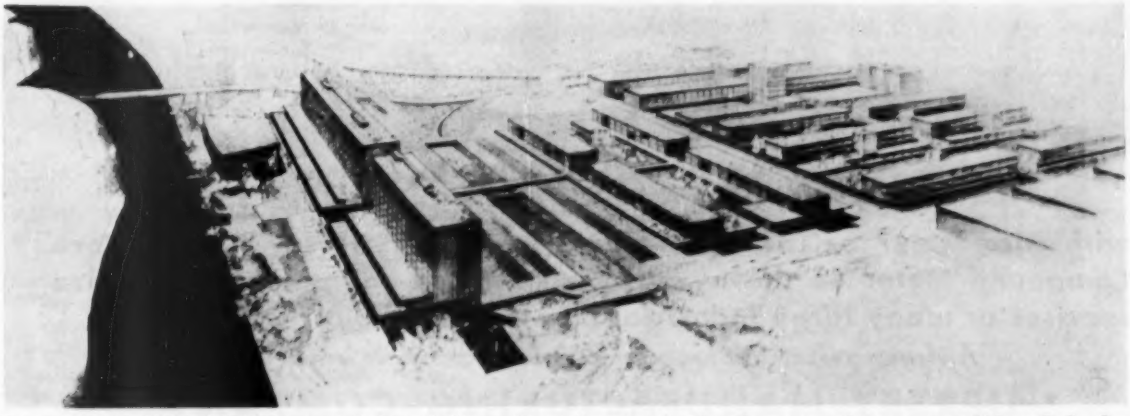
Plans are progressing for the zoning of a 2,000-acre addition to this district for industry. The International Harvester Company already has bought over 500 acres for the relocation and expansion of their commercial truck-manufacturing plant. Additionally, being developed is a light manufacturing district of 58 acres adjacent to the city limits. It will be known as the Buckeye Industrial District. It is planned that all streets and utilities will be installed by the developers.

Redevelopment Designs Win Architectural Awards

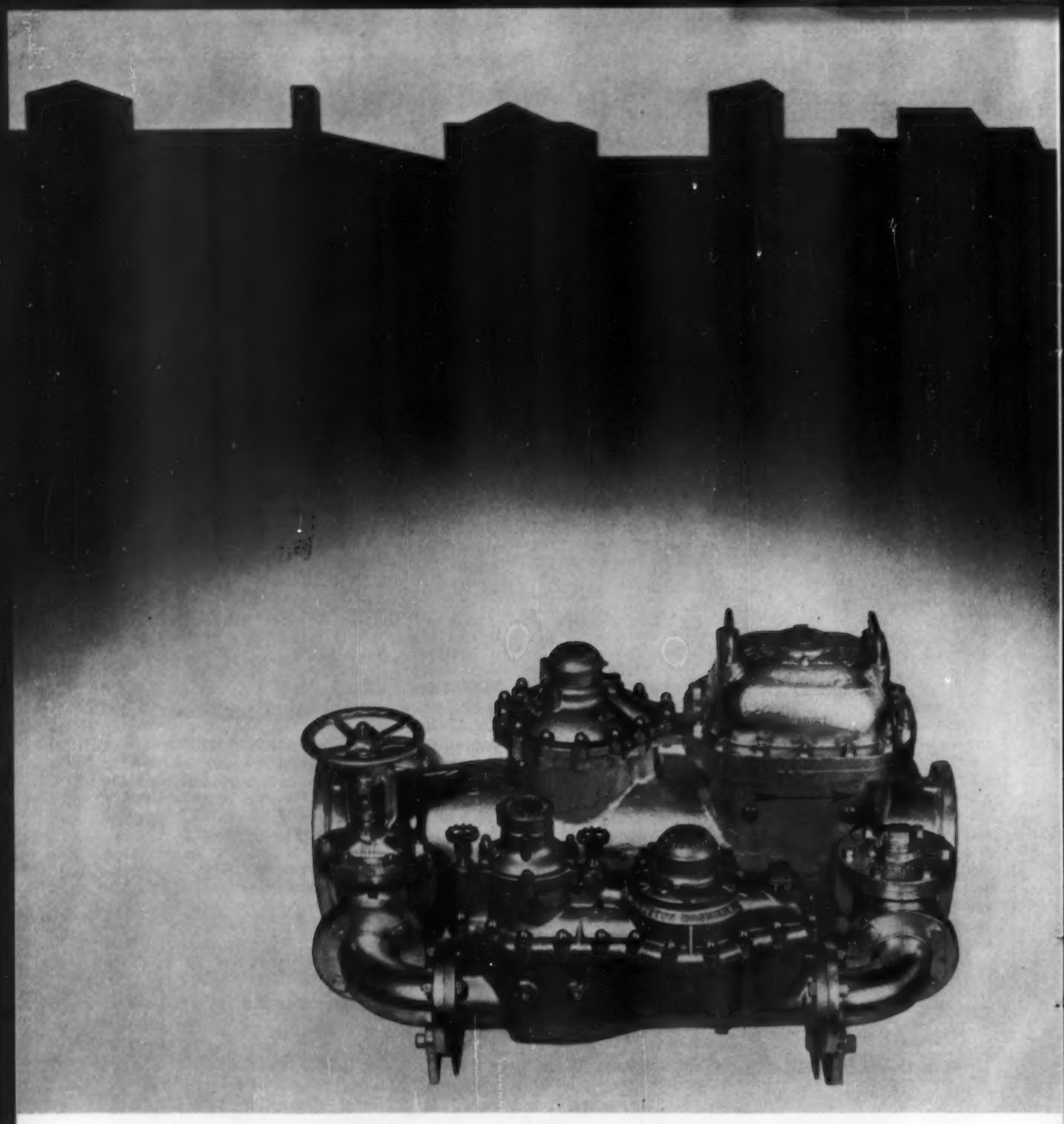
OUTSTANDING designs for proposed urban redevelopment and housing projects in Sacramento, Calif., Chicago, and Philadelphia have won honors in the second annual Design Awards Program sponsored by *Progressive Architecture*, national architectural magazine.

Plans submitted by Richard J. Neutra and Robert E. Alexander for the redevelopment of a blighted 12-block area in Sacramento were singled out by the jury for a special city planning award. The architects shaped their design to meet the needs of the Sacramento business district and to take maximum advantage of the Sacramento River by creating a series of commercial blocks with buildings placed at the peripheries and the block interiors reserved as open spaces for vehicular access and parking. Hotels or apartments were suggested uses for the lands bordering the river. Because the traffic circulation, parking, and truck-loading aspects of the design were so well handled, the jury felt that many of the features of the plan could be applied to any city suffering from "motoritis."

Vincent G. Kling's design for a transportation center for the proposed Penn Center plan in Philadelphia, and Harry Weese's design for housing in a redevelopment project in Chicago also won awards, which were presented in New York on January 14.



The designs by Richard J. Neutra and Robert E. Alexander of Los Angeles for the proposed Sacramento Urban Redevelopment Area have won a Special Design Award in the second annual Design Awards Program, which was sponsored by *Progressive Architecture*. The architects hope that this design will serve as a solution to other communities with similar problems.



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Some Current Municipal Trends

Can a Community Control Its Rate of Growth?

A GROWING number of attempts to control the rate of suburban growth have been in the news in recent months. During October 1954 two surging Michigan communities—St. Clair Shores and Roseville, both of them near Detroit—clamped the lid on all growth by ordering a complete halt in the issuance of building permits. Some months before, a New Canaan, Conn., ordinance empowered the zoning commission of that town to regulate the rate at which new homes could be built in subdivisions of large vacant tracts. With the prospect of a continuing high level of new home construction in the coming months, it is almost certain that there will be additional attempts to slow the present rapid rate of suburban growth.

In response to this emerging trend, the New York Chapter of the American Institute of Planners recently staged an evening discussion aimed at developing better techniques for controlling unmanagably rapid population growth. All of the city planners attending the meeting agreed that state enabling acts specifically permitting communities to control rates of growth were necessary if such controls were to be applied legally. Without such authorizations, blanket refusals to issue building permits were likely to meet the same negative fate in the courts that Milford, Conn., met when it refused to issue new subdivision approvals.

The Connecticut town had based its refusal to issue new subdivision permits on the belief that its local financial status made it impossible for the town to provide adequate school, highway, police, and other municipal services for the population that would be housed in new subdivisions. Connecticut's highest court held, however, that the state enabling act establishing procedures for reviewing subdivisions did not include any authorization for refusing subdivision approvals on the grounds of local financial difficulties. The Court held, therefore, that Milford had exceeded the authority granted to it by the state. (See Zoning and Planning Notes, THE AMERCAN CITY, August, 1954, p. 163.)

The planners agreed that among the various justifications for controlling growth rates, the most important appeared to be to mesh the rate of new home construction with the rate of construction of new municipal facilities in order to prevent school overcrowding, the lack of proper refuse disposal facilities, etc. Another reason was to prevent a too rapid exhaustion of a community's borrowing capacity with an attendant loss of good credit standing in the municipal bond field.

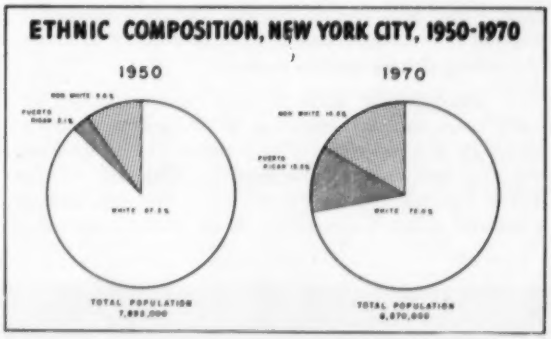
Henry Fagin, planning director of the Regional Plan Association of New York, advanced a proposal for controlling growth involving the division of a community into districts of "building priority." More rapid rates of building growth would be permitted in the higher priority zones while low rates of growth would be enforced in low priority zones. The priorities for the various zones would be established in relation to a community-wide program for public improvement with the higher building rates going to areas receiving schools and other improvements that could serve the expected population increases. Under a system of rationing building permits, a first-come-first-served basis would control the growth.

Poor Housing Forces Economic Shifts in Metropolitan Areas

ONE of the most significant characteristics of the metropolitan housing problem is that the existence of slums and the spread of blight is producing major shifts in the income distribution among residents in central cities. The central areas are tending to become repositories of low-income and minority groups, while the lack of new moderate rental housing is forcing middle-income families to seek new housing in the suburbs.

Two reports issued recently highlight this trend. In a study titled, "Recent Social and Economic Trends in St. Louis and St. Louis County," the Social Planning Council of St. Louis, Mo., showed that the entire 5% increase in St. Louis' population between 1940 and 1950 was due to an influx of new Negro families attracted mainly from low-income rural areas in the South. In 1949, income data for the St. Louis area showed that the median earnings of families living in the city amounted to $2,718 per family, while the comparable figure for families in St. Louis County was $3,628 per family—a 33% difference. As an indication of the serious implications that this trend has, the report showed that between 1938 and 1948 St. Louis' share of all retail sales in the St. Louis area dropped from 69% to 63%.

The second report, titled, "Population Changes in New York City," issued by the City Planning Department of the nation's largest city, predicted that by 1970 nonwhite and Puerto Rican individuals would represent 28% of the city population in contrast to the almost 13% that they now represent. A chart from the report illustrating this trend is shown on this page. It is apparent that these trends cannot be allowed to continue if metropolitan areas are to assure themselves of a rational distribution of income groups in the future.



An illustration of the growing trend whereby minority and low income groups are being concentrated in central cities.

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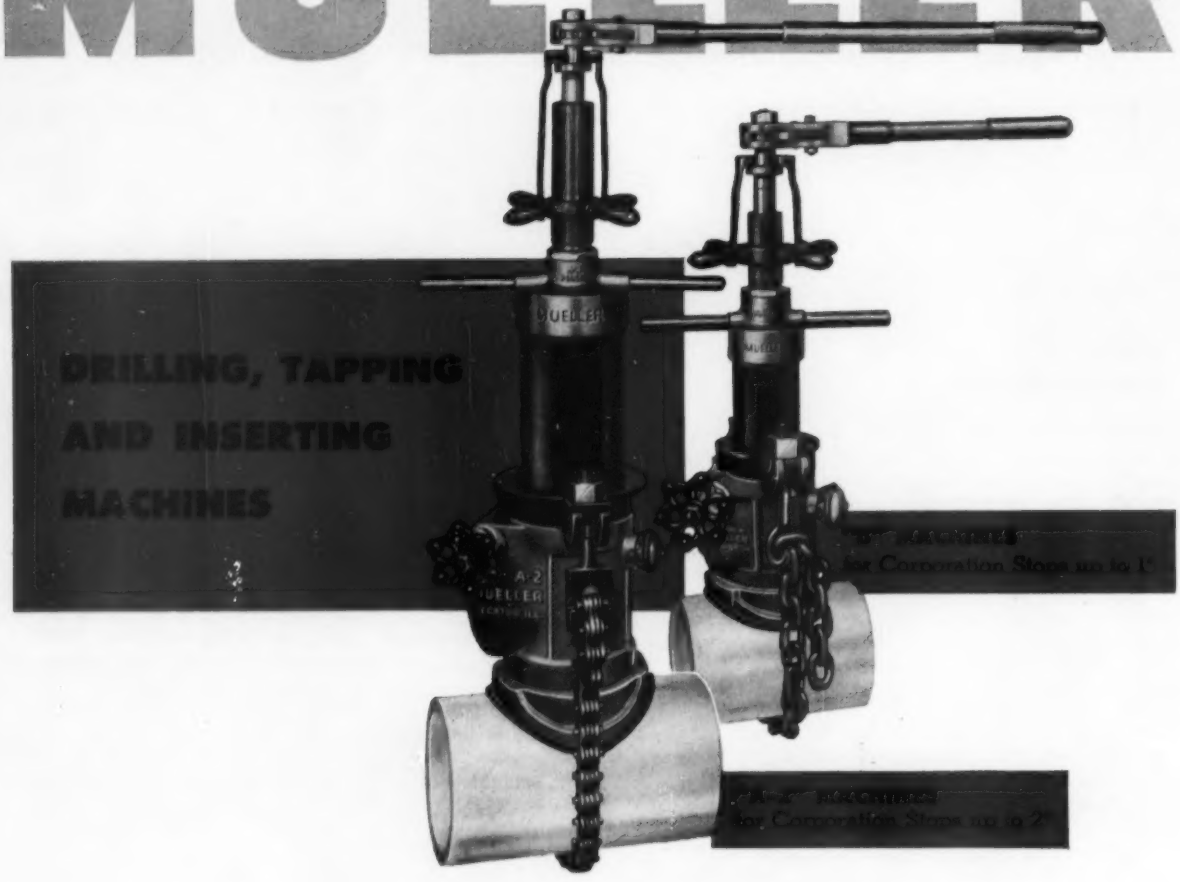

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572	578	584	590	596	602	608	614	620	626	632	638
573	579	585	591	597	603	609	615	621	627	633	639
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575	581	587	593	599	605	611	617	623	629	635	641
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593 The operator of this semi self-propelled Tennant machine simply guides the unit over the traffic line at a slow walking speed, shaving off the paint in one operation. Powered by a 6-hp gasoline engine, the machine removes traffic lines up to 8 inches wide. It operates on both concrete and asphalt surfaces without using either water or chemicals. Write the G. H. TENNANT CO., 2520 N. SECOND ST., MINNEAPOLIS 11, MINN.

Heavy-Duty V8 Engines

594 Designed to meet the requirements of a wide range of municipal transportation problems, these new, heavy-duty V8 engines feature a high power-to-weight ratio, and are constructed for long life under sustained high-speed operation. Two new engines include the V8603, a 240-hp gasoline model, and the VD8603 cushioned power diesel, delivering 182-hp at 2,800 rpm. For additional data, write the CONTINENTAL MOTORS CORP., MUSKEGON 82, MICH.

Bituminous Street Finisher

595 A detailed catalog from the Barber-Greene Co., discusses the operation of the Model 879-A bituminous finisher designed with automatic leveling and thickness control. Illustrations show the unit at work in a wide range of applications and locations, and a special cutaway photograph details the finisher's inner mechanisms. For your copy, write the BARBER-GREENE CO., AURORA, ILL.

Indoor and Outdoor Swimming Pools

596 All that is needed to maintain a Tower All Steel Pool is an occasional coat of paint, according to the TOWER IRON WORKS, 60 BORDEN ST., PROVIDENCE 3, R. I. These dependable swimming pools are guaranteed against leaking, cracking and structural defects. They are scientifically constructed for both outdoor and indoor installation. Write for details.

New Aerial Survey Plan

597 The ABRAMS AERIAL SURVEY CORP., 606 E. SHIAWASSEE ST., LANSING 1, MICH., will be happy to send you a new aerial survey plan developed especially for municipalities. This folder includes full page reproductions of contact prints, an atlas sheet at a scale of 1-inch equals 100 feet, and a photo mosaic. The contact prints, actually a stereo pair, feature a third dimension which can be seen under a stereoscope. Cities find these maps useful to virtually every municipal department from city planning to sewer construction.

New "Jeep" Removes Snow Quickly

598 Equipped with a snow blade, the 4-Wheel Drive Universal "Jeep" is an efficient snow plow for clearing streets, walks and driveways. The hydraulically-controlled blade is quickly attached and easily removed. Thus, the new "Jeep" may be used for a variety of other city jobs as well. For complete information, write WILLYS MOTORS, INC., TOLEDO 1, OHIO.

Expedites Loading and Dumping Operations

599 Mounted on any standard truck chassis, the new Load Lugger features powerful hydraulic arms, operated from the truck cab, which will lift up to 18,000 pounds of material. The unit hoists loaded Load Lugger containers or pallets onto its bed, carries them well forward and securely cradled between sidewalls, dumps them, and puts them down. Information on the low-cost Load Lugger system including a special truck body, containers and pallets, is available from the BROOKS EQUIPMENT & MFG. CO., KNOXVILLE 21, TENN.

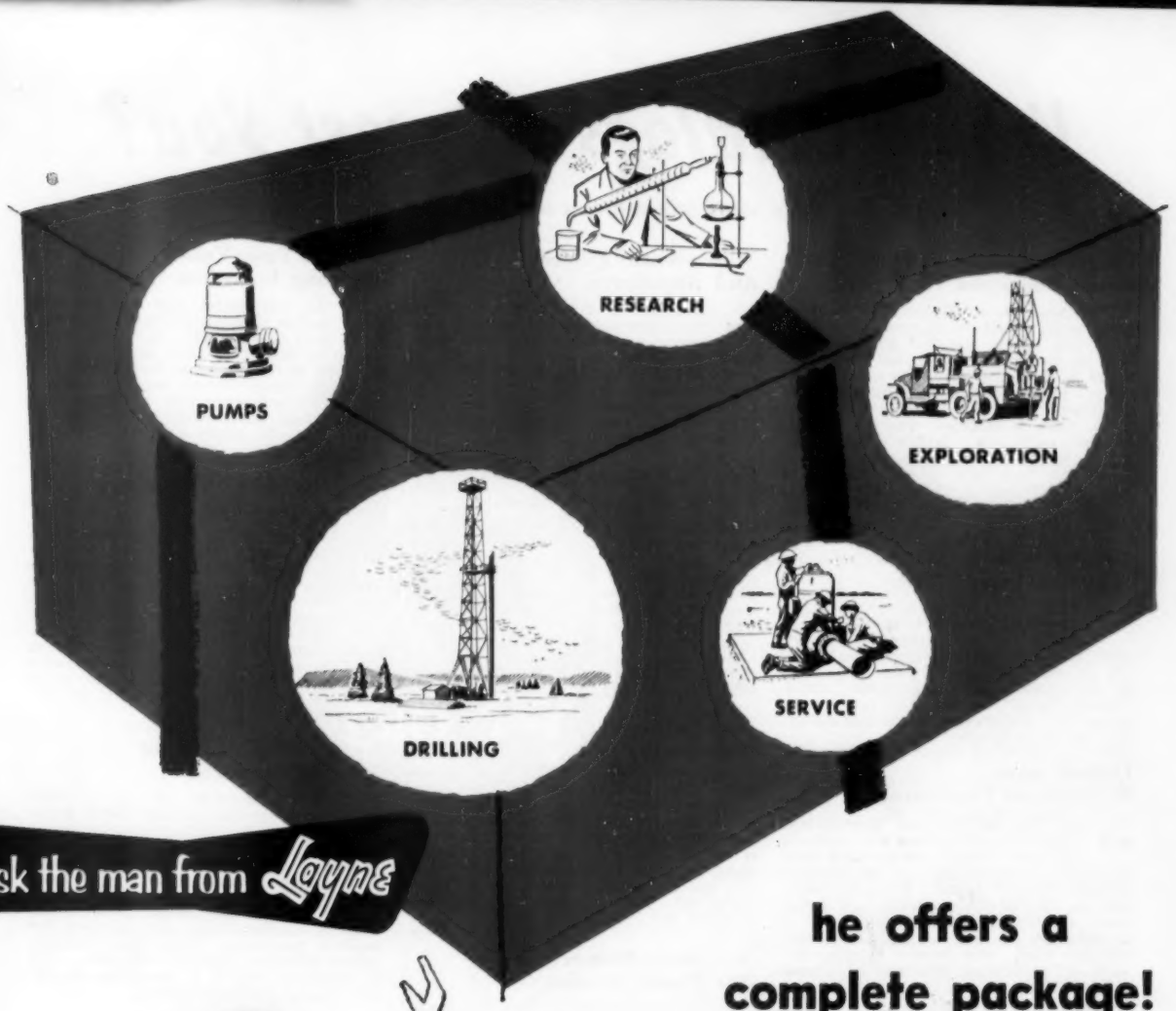
Collects More Refuse Faster

600 Always on the lookout for faster, cleaner and more efficient refuse collections, sanitation officials are now offered the continuous operation and greater compaction of the Roto-Pac, a new refuse collection unit from the CITY TANK CORP., 53-09 97th PL., CORONA, L. I., N. Y. In addition to automatic continuous packing, the Roto-Pac offers an exceptionally low loading height, and features double pivot-type telescopic body hoists. It will handle straight ash loads and, when necessary, can double as a snow-hauling vehicle. Details on request.

Adequate Emergency Power For Civil Defense

601 This latest issue of Onan's *Power Points Digest, Vol.* 10, *No.* 6, describes the various ways in which communities can use Onan electric plants in civil defense work. In Miami Valley (Ohio) for instance, some 14 Onan 5-kw plants insure power protection for seven civil defense zone headquarters. Columbia (S.C.) has equipped a fire department emergency truck with an Onan 3,500-Watt electric plant, and communications centers in Mississippi and Oklahoma rely on Onan electric power for their essential communication equipment. Write D. W. ONAN & SONS INC., 2523 UNIVERSITY AVE., S.E., MINNEAPOLIS 14, MINN.

(Please turn to page 34 for more Bulletins)



ask the man from Layne

he offers a complete package!

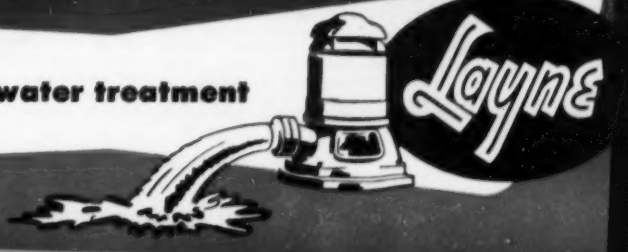
There is no "buck passing" on a Layne job. From exploration to continuing, ever responsible service, Layne offers undivided responsibility on every job Layne undertakes.

This completeness of Layne service is one major reason why Layne has been the selection of so many top flight industries. And that over all responsibility is just as important to municipalities, large and small, as to agriculture. On anything that relates to any phase of water—"ask the man from Layne."

Layne Associate Companies Throughout the World

LAYNE & BOWLER, INC.
Memphis 8, Tennessee

water wells • vertical turbine pumps • water treatment



Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 31

Cast-Iron Pipe in Small Diameters

602 These 18-foot lengths of cast-iron pipe, 2- and 2¼ inches in diameter, are easily installed by two men who lay the pipe on skids over the trench, make the joint and snake the line into the ditch. The Super DeLavaud pipe may be furnished uncoated, coated or cement lined, with a complete line of fittings, bell-and-spigot or Boltite Mechanical Joint. For complete information, address either the McWANE CAST IRON PIPE CO., BIRMINGHAM, ALA., or the PACIFIC STATES CAST IRON PIPE CO., PROVO, UTAH.

Makes Duplicate Copies Without Carbon Paper

603 New NCR paper speeds multiple copying by eliminating the use of messy carbon paper. Three or more forms are placed together and written on—by typewriter, business machine, or by hand—producing clear, clean, "smudge-proof" copies. For full details, write THE NATIONAL CASH REGISTER CO., DAYTON 9, OHIO.

Light-Weight Distribution Transformer

604 A new distribution transformer utilizes a tank shape that reduces size and weight and provides compactness. It is available in all primary voltages through 13,800. Presently available in the 167-kva capacity, L-M states that all single-phase transformers 5 through 100 kva will be redesigned with the new tank. For further information, write A. B. Coyle, Manager of Transformer Sales, LINE MATERIAL CO., MILWAUKEE 1, WIS.

Speeds Refuse Collection

605 *Bulletin H-1* describes the Hydepak, a new hydraulic refuse collection body available from the TRIAD SALES CO., 3918 HARRY HINES BLVD., DALLAS 7, TEX. This efficient garbage collection unit is designed with a large loading compartment for quick, easy loading. It features a fast packing cycle, only 18 seconds in most models, for quick refuse collection with minimum wear on the truck engine.

New Self-Closing Lids For Refuse Containers

606 Transform your Witt heavy-duty refuse containers into sanitary, self-closing units, by furnishing them with this new line of Witt push-top lids. Designed especially for use in parks, playgrounds and public lavoratories, the new lids are constructed of 24-gauge Perma-Zinc sheet steel with an 8⅝-inch opening, and are available for Witt 20-, 27- and 33-gallon cans. Get full information by writing THE WITT CORNICE CO., 2139 WINCHELL AVE., CINCINNATI 14, OHIO.

Standard Badges for Police, Fire, and Other Officials

607 A company that has provided police, fire and other city, county and state officials with standard badges for over three-quarters of a century, offers a new catalog illustrating a variety of these dependable badges. For your copy, write THE C. G. BRAXMAR CO., INC., 216 E. 45th ST., NEW YORK 17, N. Y.

Water-Works Filters And Accessories

608 A complete line of gravity filters and filter accessories—manually operated, semi-automatic and automatic—including operating tables, rate of flow controllers and gauges, are described and illustrated in *Bulletin No. 2539B*. Copies are available, without cost, from THE PERMUTIT CO., 330 W. 42nd ST., NEW YORK 36, N. Y.

Low-Cost Water Tank For Small Communities

609 The "100 on a 100," an elevated steel tank on a 100-foot tower, holds 100,000 gallons of water, enough to handle the average water storage needs of a small community. This economical double-ellipsoidal model, along with a variety of other P-DM tank types, is described in a new *Modern Water Storage* catalog. For your copy, write the PITTSBURGH-DES MOINES STEEL CO., PITTSBURGH, PA.

Easy-to-Erect Steel Warehouses

610 Constructed of steel and aluminum, these factory-made municipal warehouses are quick and easy to erect and economical to maintain. They feature steel clear-span frames for making every cubic foot of interior usable. Bolted apron walls facilitate expansion and alteration. Get full information from the BUTLER MFG. CO., 7350 E. 13TH ST., KANSAS CITY 26, MO.

New Street Broom Has Plastic Bristles

611 Constructed with Duratex plastic fibre bristles, the new Freeway broom wears longer, sweeps cleaner, and is easier to wash than ordinary hand brooms. The Duratex bristles form a wide flare for thorough sweeping of streets, sidewalks and parks. Dust, dirt and grime are removed with plain water quickly and easily. Secure literature from the AMERICAN PUSH BROOM & BRUSH CO., 617 SANSOME ST., SAN FRANCISCO 11, CALIF.

Provide Your City with Dependable Flood Control

612 This well-known engine manufacturer will furnish the experienced engineers needed to assist you in planning adequate, independently powered flood control facilities for your municipality. Regardless of the pumping capacities required, there is an Enterprise engine to do the job for you, quickly, efficiently, and at lowest possible cost. Write for details to the ENTERPRISE ENGINE & MACHINERY CO., 18th and FLORIDA ST., SAN FRANCISCO 10, CALIF.

Street-Name Signs

613 Aluminum street-name signs, reflectorized for around-the-clock visibility, are made for "lifetime" service by LAKE SHORE MARKERS, INC., P. O. BOX 59, ERIE 1, PA. The company also offers a variety of traffic and direction signs constructed of new fiberglass. A descriptive catalog and free samples will be furnished on request.

Reduce Your Public Liability Insurance

614 An economical plan for handling public liability insurance, including sidewalk liability, has been introduced by Robert F. Coleman, and is now at work in such cities as New Haven and Norwalk, Conn. Cities and counties are invited to write the firm for folder and information. Address ROBERT F. COLEMAN INC., 79 JOHN ST,, NEW YORK, N. Y.

Underground Fire Hydrant For Airport Use

615 A new flush-type fire hydrant sets completely underground with a cast-iron box cover on line with the ground level. Designed especially for use in municipal airports, it offers adequate fire protection without interfering with heavy plane traffic. The operating nut and nozzles are easily accessible by lifting the disappearing handles of the two-piece cover. For additional information, write the M & H VALVE AND FITTINGS CO., ANNISTON, ALA.

New Front-End Loader Fits All Tractors

616 Easily mounted on any popular make tractor, the new Davis front-end loader incorporates powerful lift arms, special lift rams with down pressure, and a large centralized reservoir for a clean hydraulic system. It is available with such attachments as a material bucket with a high carbon steel cutting edge, a scarifier, crane, and hammer for busting pavement, rocks and concrete. MID-WESTERN INDUSTRIES, INC., 1009 S. WEST ST., DEPT. A, WICHITA, KANS., will furnish full information.

New Truck-Mounted Aerial Platform

617 This hydraulic aerial platform, the Pitman Giraffe, lifts workmen, tools and materials up to 40 feet, facilitating a variety of overhead maintenance jobs. Working without outriggers, the unit lifts 450 pounds in any boom position. With outriggers, it will lift up to 1,000 pounds. A new 8-page brochure is available from the PITMAN MFG. CO., ROOM 155, 300 W. 79th TERRACE, KANSAS CITY, MO.

"Safe Exit" Movie

618 "Safe Exit," a new 20-minute, 16MM black and white sound film, shows what ample exists from public buildings mean in terms of safety and actual savings in fire equipment. The film was prepared as an aid to fire and municipal officials as well as building inspectors, and is available, without rental charge, from the VON DURIN DIV., VONNEGUT HARDWARE CO., 402 W. MARYLAND ST., INDIANAPOLIS 9, IND.

Water, Sewage and Waste Treatment Equipment

619 Hardinge circular clarifiers up to 200 feet in diameter, rectangular clarifiers with crane-type scraping mechanisms, digesters, and automatic backwash sand filters are described and illustrated in a new 20-page catalog from the HARDINGE CO., INC., YORK, PA. Write for *Bulletin 35-D*.

(Please turn to page 36 for more Bulletins)

If you're an engineer, you want three things in a water line: *long life, adequate strength, sustained capacity.*

Many lines now in the ground meet only one or two of these requirements. They "blow up" because they don't have the strength to resist earth movement and traffic loads, or they tuberculate or corrode and require costly cleaning.

Such lines are expensive to maintain and often they aren't handling their design capacity in areas where demand is skyrocketing.

But you don't have to worry about the line you lay in 1955 . . . *if* it's "concrete".

Jacksonville, Illinois' new 23-mile line, for example, is Price Prestressed Concrete Steel-Cylinder Pipe. It meets *every one* of the *"Big 3" requirements. Ageless* when buried underground, this "concrete" line has *great strength* and will maintain its *high capacity* year after year without maintenance.

Write for our new 24-page booklet, "The Story of Concrete Pressure Pipe." It will tell you why "concrete" will do your job best.

MEMBER AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION

Price Brothers Company

1835 East Monument Ave. • Dayton 1, Ohio

Concrete Pressure Pipe for Water Supply, Subaqueous, Pressure Sewer and Culvert Installations

achieve POSITIVE ODOR CONTROL IN SEWAGE TREATMENT PLANTS with CIFON, N. Y.*

American Cities of every size are now overcoming ODOR problems with this new, economical and effective sanitation chemical product. In the treatment of raw sludge in storage tanks (1 gal. Cifon, N.Y. to 6000 gals. of raw sludge)—in the spray application at the vacuum filter exhaust and other vulnerable areas in the plant—and in the dosing of sand filter beds—CIFON, N.Y. has proven itself a positive odor-control agent. No special equipment or training of personnel required.

CIFON, N. Y. *SERVES MUNICIPALITIES IN MANY WAYS*

GARBAGE DISPOSAL DUMPS When sprayed on garbage dumps in a dilution of 1 gal. to 100 gallons of water CIFON, N.Y. will counteract the odor of garbage, will prevent the generation of undesirable odors due to decomposition of garbage and prevent the breeding of flies.

SEWER SANITATION CIFON, N.Y. will remove slime, bacteria and fats in plugged up sewers through its solvent action, and will aid in the control of disease producing and carrying organisms.

GENERAL SANITATION CIFON, N.Y. repels flies and mosquitoes and prevents mosquitoes from breeding in marshy lands . . . Used for dousing garbage trucks and garbage scows.

*CIFON, N.Y. *is an emulsifiable, sanitizing and deodorizing chemical—compatible with soap—contains no caustic, free chlorine or carbolic acid.*

FINE ORGANICS, INC.
211 EAST 19th STREET • NEW YORK 3, N. Y.

Mail handy coupon for complete information on how to solve ODOR problems in your city, quickly, efficiently, and economically. There is no obligation on your part.

FINE ORGANICS, INC., 211 E. 19th St. • Dept. 'CA' • New York 3, N. Y.

Gentlemen: Please send me information on CIFON, N.Y.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

Catalogs for You

Write directly to the manufacturers or use coupon on page 31

Ends Salt-Slush Corrosion

620 For efficient snow removal without the penalty of salt-slush corrosion, add Banox to your de-icing salt. Banox prevents salt-slush from damaging cars, bridges, municipal equipment and other costly metal surfaces. Added to your salt mixture, it leaves no residue eliminating costly spring clean-up of clogged gutters, sewers and catch basins. For the new booklet, *Stop, Look and Save With Banox*, write CALGON, INC., HAGAN BLDG., PITTSBURGH 30, PA.

Provides Quick Identification Of Municipal Equipment

621 An easy way to mark your trucks and other municipal equipment, is to apply Ward's trucksign transfers, available in any shape or number of colors. These transfers are made in sizes up to 20 x 30 inches for application on smooth surfaces such as door or truck panels. They are fully described in literature from WARD'S TRUCKSIGN TRANSFERS, 8504 LYNDON AVE., DETROIT 38, MICH.

Stationary Asphalt Plant For Hot-Mix Paving

622 A good hot-mix for all of your municipal paving operations as well as for street and highway maintenance, may be obtained with a White stationary asphalt plant. These reasonably-priced plants include an oil-fired rotary dryer, batch mixer, vibrating screen, divided hot bin, and volumetric or weigh scales. Two models are available: Model L-12, 12-15 tons per hour; and Model L-25, 25-30 tons per hour. Write the WHITE MFG. CO., ELKHART 1, IND.

Water and Sewer Pipe

623 Water and sewage problems of city and industry get answered in new literature from PRICE BROTHERS CO., 1801 E. MONUMENT AVE., DAYTON 1, OHIO. The long life, great strength and sustained high carrying capacity of Price concrete steel-cylinder pressure pipe are now serving such cities as Louisville, Ky.; Cleveland, Ohio; Miami, Fla.; and Rochester, N. Y.

Uniform Fabrics for Police and Firemen

624 Cost-wise police and fire department officials furnish their men with durable uniforms that retain their strength and color year after year. The stock-dyed blue serge offered by this company is adaptable to the roughest wear. The all-wool fabric is tested for color uniformity, shrinkage from dry cleaning, and fastness to light and perspiration. Write METCALF BROS. & CO., INC., 45 E. 17th ST., NEW YORK, N. Y.

Pneumatic Sewage Ejector

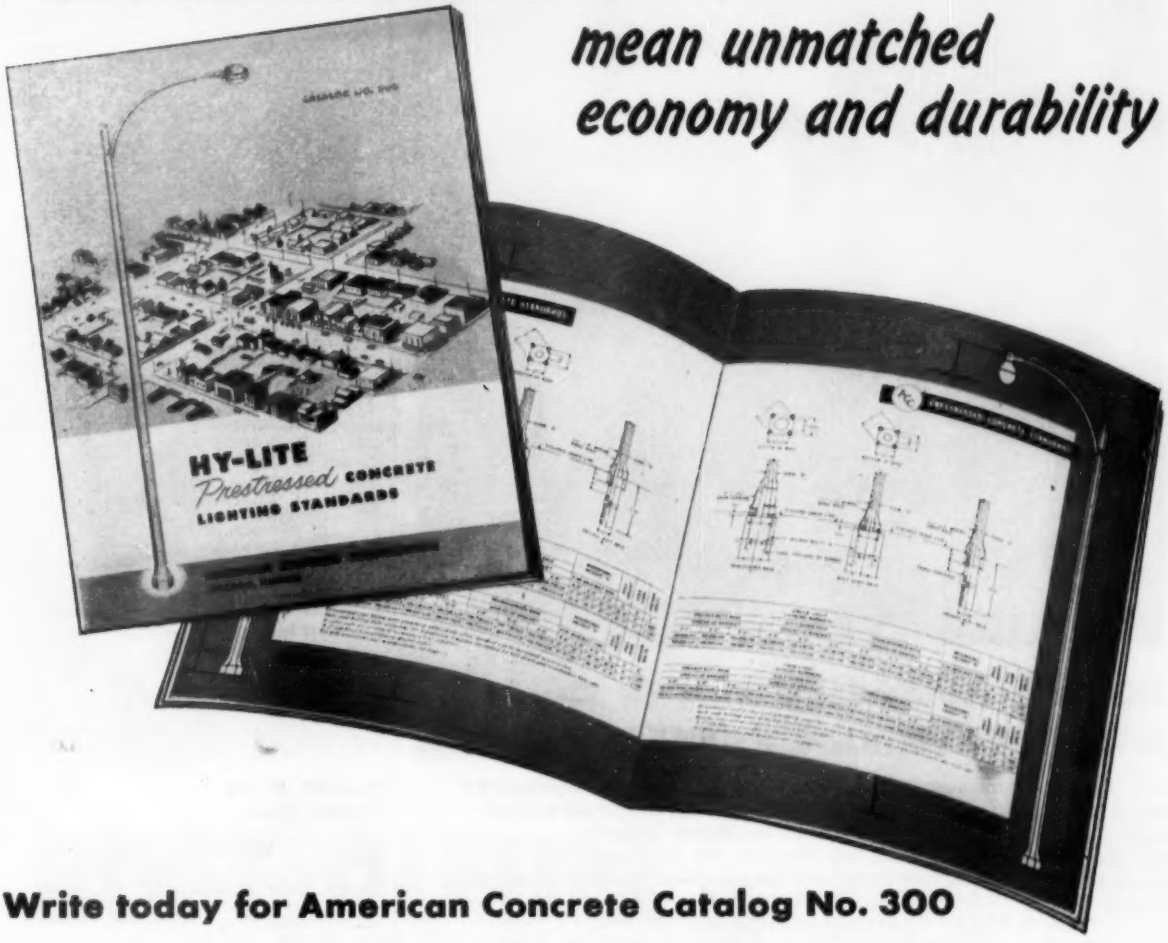
625 One of the most efficient ways to lift sewage and sludge at municipal treatment plants, is to use Blackburn-Smith pneumatic sewage ejectors available from the BLACKBURN-SMITH MFG. CO., 57 GARDEN ST., HOBOKEN, N. J. These dependable units lift sewage straight up, once a minute, without fail. More sanitary than centrifugal submerged type sewage ejectors, they completely eliminate cleaning of screens and pumps. Write for *Catalog S50*.

(See p. 38 for more Bulletins)

Find out why

PRESTRESSED CONCRETE HY-LITES

mean unmatched economy and durability



Write today for American Concrete Catalog No. 300

IF you are responsible for planning, specifying or purchasing street lighting standards . . . you will want a copy of American Concrete Corporation's helpful Catalog No. 300 on Hy-Lite Prestressed Concrete Lighting Standards.

This new 24-page booklet gives you complete information on attractive Hy-Lite designs, foundation and mounting arrangements, engineering data, specifications, dimensions, and details on today's greatest advancement in reinforced concrete construction . . . *prestressing.*

In this catalog you will also find a photo-story on the making of Hy-Lites, as well as numerous pictures of typical Hy-Lite installations. Four pages are devoted to a complete description of upright standards for special lighting applications.

To get your free copy, simply fill-in and mail the handy coupon, or write to The American Concrete Corporation, 5092 North Kimberly Avenue, Chicago 30, Illinois.

American Concrete
PRESTRESSED CONCRETE LIGHTING STANDARDS

American Concrete Corporation
5092 North Kimberly Avenue
Chicago 30, Illinois

Please send me Catalog No. 300 on Hy-Lite Prestressed Concrete Lighting Standards.

Name_____

Affiliation_____

Address_____

City_____ Zone_____ State_____

20 Bell Holes Like This in One Day with a SHERMAN POWER DIGGER!

"Pay for themselves faster than most of our other equipment!" That's what R. Mannino & Sons, Westfield, New Jersey general contractors say about their Sherman Power Diggers.

A typical Mannino job was for the local gas company. Replacement of clamps and seals on gas mains required digging a series of bell holes. The Sherman Power Digger reduced digging time for the average bell hole to about fifteen or twenty minutes, making it possible to replace as many as twenty clamps a day.

If you now excavate by hand, or if your heavier equipment cannot work in tight spots, you, too, will find the versatile Sherman Power Digger practical and profitable. It's compact, flexible, fast, easy to operate. It digs in a fraction of the time and cost of manual labor—as deep as 10′ below grade in mud, hard-pan, shale, oiled roads, blacktop and stony ground.

Initial cost of the Sherman Power Digger is surprisingly low, maintenance simple and inexpensive. Write today for the whole story. Ask for Bulletin No. D56.

Designed, Engineered and Manufactured Jointly by
SHERMAN PRODUCTS, Inc.
Royal Oak, Michigan
WAIN-ROY CORPORATION
Hubbardston, Mass.

Patent No. 2,303,852
Other patents pending
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Sherman
PRODUCTS, INC.
ROYAL OAK, MICHIGAN

Catalogs for You

Write directly to the manufacturers or use coupon on page 31

Solves Your Heavy-Duty Trucking Problems

626 "The Truck That Went to College," a report of seven years' truck research by the University of Wisconsin's College of Engineering, plus a number of product folders describing 4- and 6-wheel drive units from 14,500 to 60,000 pounds G.V.W., will help you choose the proper truck for every municipal need. Copies are available from THE FOUR WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS.

New Truck-Mounted Excavator Cranes

627 A 404 cubic-inch truck engine powers the Michigan ½-yard truck excavator-crane available from the Clark Equipment Co. The unit incorporates 16-ton axles, a cast-steel turntable and six ball-bearing hook rollers, tapered for easy adjustment. For detailed information, get the new Michigan ½-yard bulletin by writing the CLARK EQUIPMENT CO., CONSTRUCTION MACHINERY DIV., 416 SECOND ST., BENTON HARBOR, MICH.

Efficient Turbine Pumps

628 A new, impeller-type vertical turbine pump has been added to the Smithway line, producing higher head and efficiency with low NPSH. These dependable pumps feature aluminum-bronze renewable wear rings, high-pressure dual seals, and low-loss suction bells. They are available in 10-, 12-, and 14-inch sizes, covering the range from 400 through 2,100 gpm. For a copy of the new 8-page bulletin, *Turbine Pumps for Industry*, write the A. O. SMITH CORP., HYDRAULIC DIVISION, 5715 SMITHWAY ST., LOS ANGELES 22, CALIF.

Restore Worn Traffic Signs

629 Instead of discarding old traffic signs, restore them with new "Ez-On" sign faces introduced by the GRACE SIGN & MFG. CO., 3601 S. SECOND ST., ST. LOUIS 18, MO. Easily attached in less than five minutes, reflectorized "Ez-On" sign faces are constructed of 30-gauge steel in 24- and 30-inch sizes. Special STOP sign faces are available in red as well as standard traffic yellow. Details on request.

Undertruck Scraper

630 In spring, summer and fall, use your Root undertruck scraper to maintain streets and roads. In winter, use it to remove ice and snow. In addition to positive hydraulic down pressure, the unit features a special moldboard that swings up when not in use. Root scrapers are designed to fit any truck, 1½- through 8 tons. Get *Bulletin* 333 from the ROOT SPRING SCRAPER CO., 545 W. NORTH ST., KALAMAZOO, MICH.

Dependable Emergency Power

631 Adequate protection against power failures is assured with efficient standby engine generators made by the UNITED STATES MOTORS CORP., 353 NEBRASKA ST., OSHKOSH, WIS. The company's complete line includes emergency power units ranging from 300 watts to 200 kw. Write for details.

(See p. 204 for more Bulletins)

Actually see Rust-Oleum applied directly over sound rusted surfaces in your own plant.

Get proof of performance right in your own plant! See Rust-Oleum 769 Damp-Proof Red Primer applied over *your own* rusted metal after simple scraping and wire-brushing to remove rust scale and loose rust. Rust-Oleum's *specially-processed* fish oil vehicle penetrates rust to bare metal—saving time, labor and money.

Rust-Oleum finish coatings in Aluminum, Gray, White, Black, Orange, Blue, Yellow, Green and others provide both *Rust Prevention and Decorative Beauty!* Specify Rust-Oleum for new construction, maintenance and re-modeling. See Sweet's for catalog and nearest Rust-Oleum Industrial Distributor, or clip coupon to your letterhead . . .

There Is Only One Rust-Oleum. It is as Distinctive as Your Own Fingerprint.

RUST-OLEUM®

STOPS RUST!

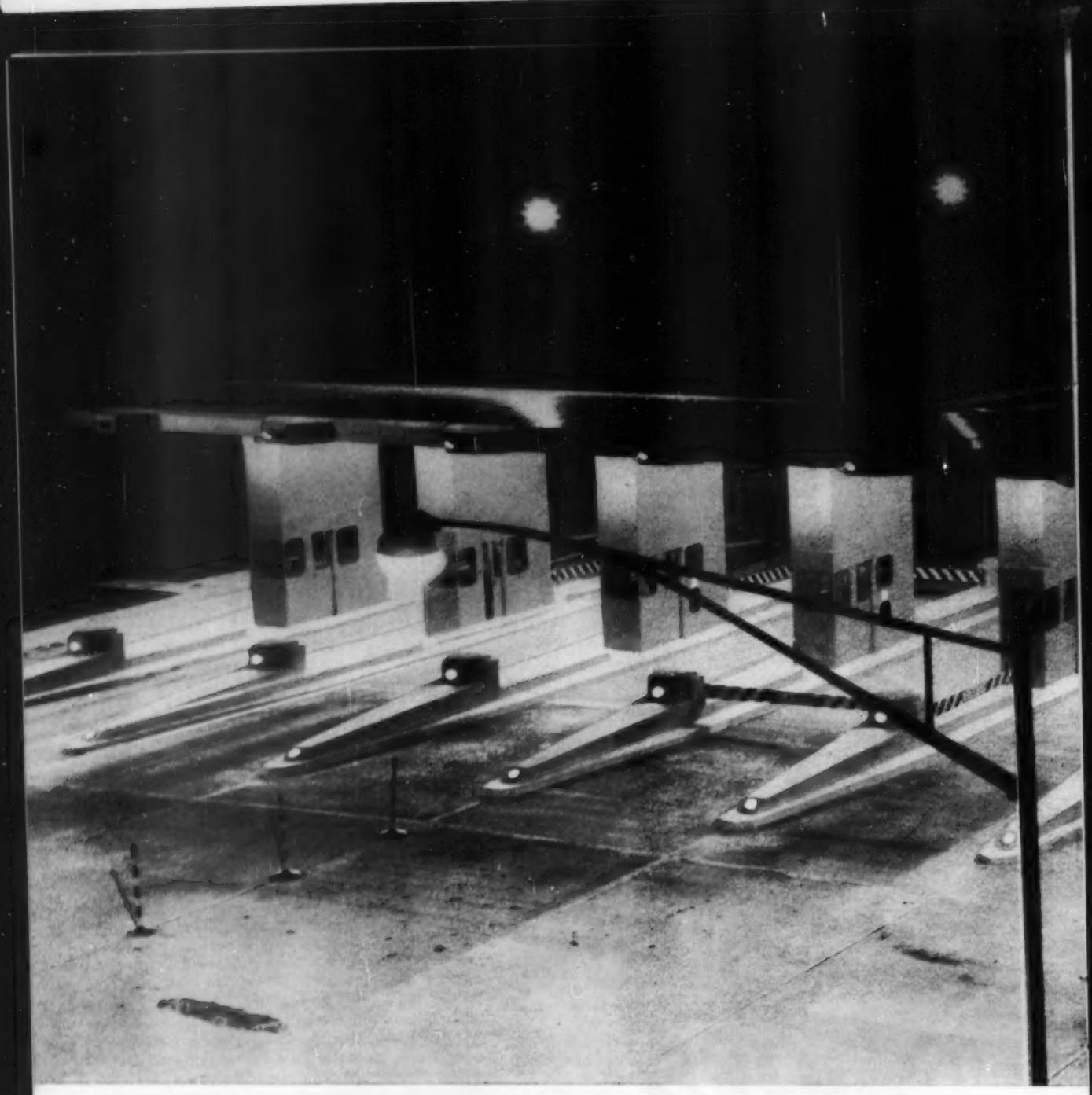
See local classified telephone directory under Rust Preventives or Paints for nearest Rust-Oleum Industrial Distributor.

ATTACH TO YOUR BUSINESS LETTERHEAD AND MAIL TO:
Rust-Oleum Corporation, 2512 Oakton St., Evanston, Ill.

- ☐ Please Show Me the Rust-Oleum "Rusted Panel Demonstration."
- ☐ Test Application of Rust-Oleum Over Rusted Metal Surfaces in My Plant.
- ☐ Complete Literature with Color Chart.
- ☐ Nearest Rust-Oleum Industrial Distributor.

HOME AND FARM USERS CHECK THIS SECTION:

- ☐ Complete Literature and Color Chart for Home Use.
- ☐ Complete Literature and Color Chart for Farm Use.
- ☐ Nearest Rust-Oleum Dealer.



They're cutting the cost of superhighway

- Their light weight cuts installation costs
- They require no initial or maintenance painting
- They have high visibility for maximum safety
- There's a complete absence of seams and joints
- They're spun from aluminum alloy, heat treated for maximum structural strength
- They're designed to fit your individual requirements

One of the keys to safer superhighways is better lighting. And for every phase of turnpike lighting there's a HAPCO Standard to fit the job. HAPCO Poles are sturdy enough for the heaviest duty, yet maintain harmonious beauty with their surroundings. They retain a silver gray beauty, resistant to virtually all atmospheric conditions. Their long life without maintenance makes the investment in HAPCO Poles pay off in the long run.

Be sure to call your Hubbard representative for assistance in specifying street lighting standards, traffic signal pedestals, flood lighting standards, and related equipment. You can order Hubbard products through more than 200 leading electrical distributors throughout the United States.

THIS JOB...

EQUIPMENT GETS IT DONE

lighting with HAPCO Aluminum Standards

FREE HAPCO CATALOG. If you'd like more details on design features and specifications of the complete HAPCO line, write for this new free catalog. It contains valuable information to help you plan the most efficient, most beautiful highway and street lighting, as well as any other outdoor lighting requirement. Hubbard Aluminum Products Company, 6301 Butler Street, Pittsburgh 1, Pa.

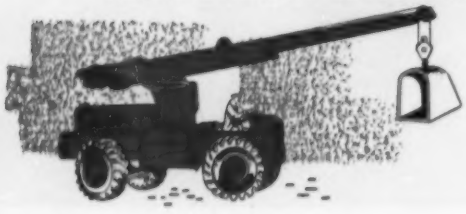
HUBBARD ALUMINUM PRODUCTS COMPANY

Division of Hubbard & Company
Pittsburgh 1, Pa.

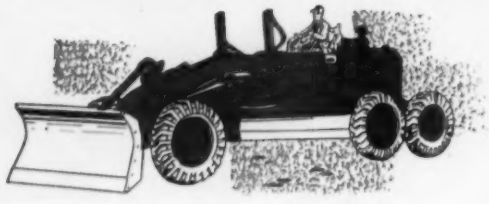
THIS JOB...
THAT JOB...
YOUR JOB...

A-W EQUIPMENT GETS IT DONE

Whatever the problem . . . whatever the job . . . those pictured above, or dozens of others, you can do it better with Austin-Western Power Graders, and the new tractor- and truck-mounted Hydraulic Cranes.



It's the LIVE BOOM that puts the A-W Hydraulic Crane out front in the performance parade . . . live power with instant response for all boom movements . . . extending and retracting, raising and lowering, and rotating. Fingertip hydraulic control handles delicate spotting jobs with superb precision. No other mobile crane has a boom so completely "alive" . . . no other outdoor-indoor crane will handle so many jobs, so well.



All-Wheel Drive provides 30% more Power-at-the-Blade; keeps the front end of the grader under control at all times. All-Wheel Steer makes the grader twice as maneuverable. Rear Steer shifts the rear truck from side to side, for better traction and smoother operation. The tougher the job, the more outstanding the performance of A-W "88" and "99" Power Graders in comparison with front steer, rear drive machines.

Austin-Western

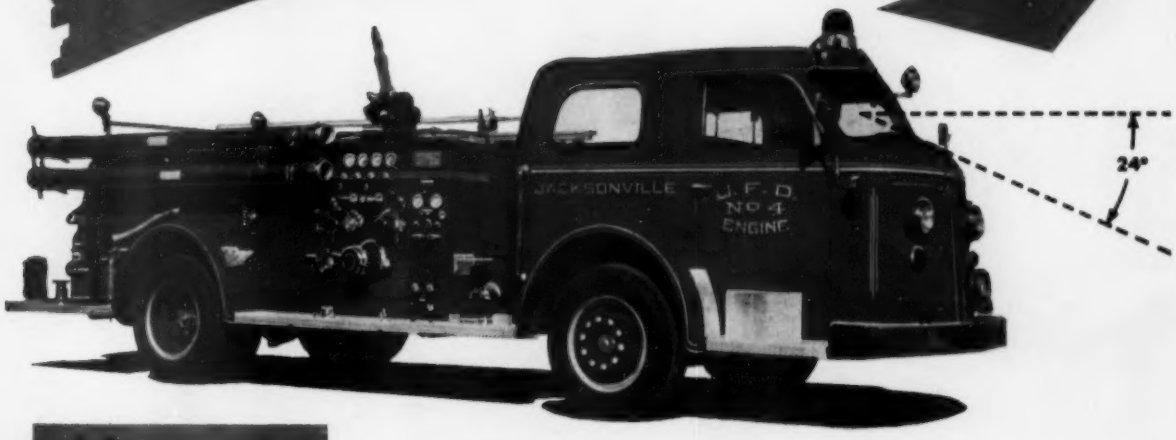
Power Graders · Motor Sweepers
Road Rollers · Hydraulic Cranes

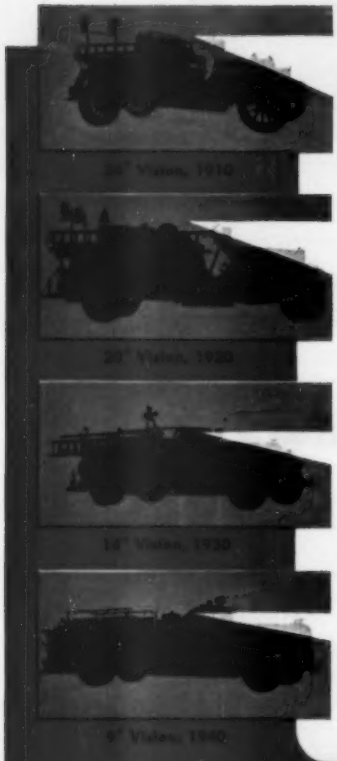
BALDWIN BLH LIMA-HAMILTON

Construction Equipment Division

Manufactured by
AUSTIN-WESTERN COMPANY
Subsidiary of Baldwin-Lima-Hamilton Corporation
AURORA, ILLINOIS, U.S.A.

How Well Can You See?





250% MORE VISION

FOR CAB-AHEAD-OF-ENGINE MODELS WHEN COMPARED WITH OLD-STYLE MODELS

In the 1943 survey you asked for more driver vision in the advanced fire engine to reverse the pre-war trend that was an increasing handicap to the driver. American-LaFrance now provides this improved visibility.

More vision for safer driving in heavy traffic and at street intersections.

More vision for accurately spotting the pumper at a hydrant.

More vision for getting through narrow streets and alley ways.

More safety for the men on the apparatus as the operating records of many bus companies show with the driver up front.

Specify American-LaFrance for more safety in the operation of your equipment.

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LAFRANCE FIRE ENGINE and FOAMITE LIMITED
TORONTO, 9, ONTARIO, CANADA

Write today for your copy of the EXTRA VALUE Book . . . at no obligation.

Preventive Maintenance Cuts Service Cost — Increases Earning Capacity

PREVENTIVE MAINTENANCE TRAINING KITS — movies, slides, charts and literature are available to help train your personnel. Your Allis-Chalmers dealer will present it for you at your convenience, or arrange to have a factory man do the job. And it can be tailored to suit your specific machines and job conditions.

How communities can take full advantage of Allis-Chalmers Dealer Service Plan

BENEFITS:

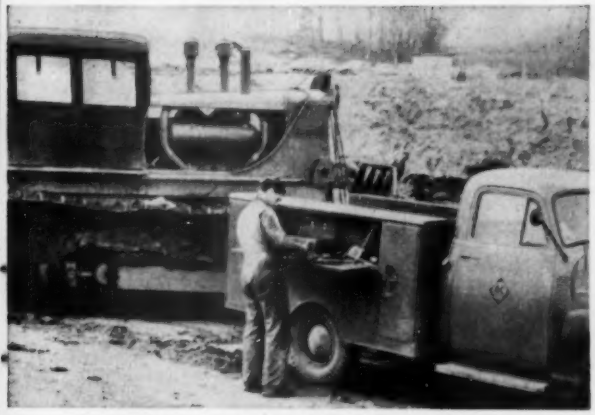
Better performance — more time on the job — longer equipment life — lower maintenance cost — higher resale value

Experience has convinced many communities that the Allis-Chalmers Dealer Service Plan is geared to keep equipment operating efficiently. They have found that taking full advantage of such service is easy, and that it pays big dividends. Here's why.

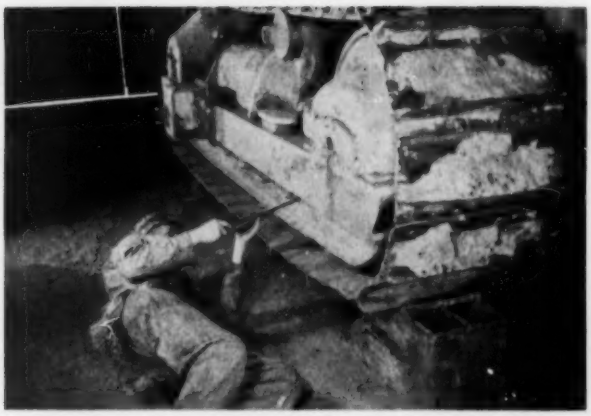
Allis-Chalmers dealers offer them a *planned* approach to service, right from the day their equipment is delivered. It covers everything from service schools to lubrication schedules, and from parts to preventive maintenance.

You owe it to yourself to take a look at the advantages this plan offers. Then see your nearby Allis-Chalmers dealer soon and ask him to give you all the facts.

ALLIS-CHALMERS
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

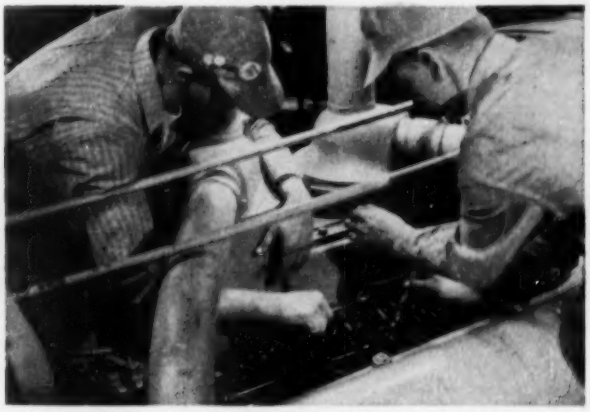


FAST PARTS SERVICE — Factory-built Allis-Chalmers parts are stocked in quantities by the *dealer*, to give you parts service as close to your job as posible. And remember, experienced equipment men agree it pays to use only standard factory-built parts.



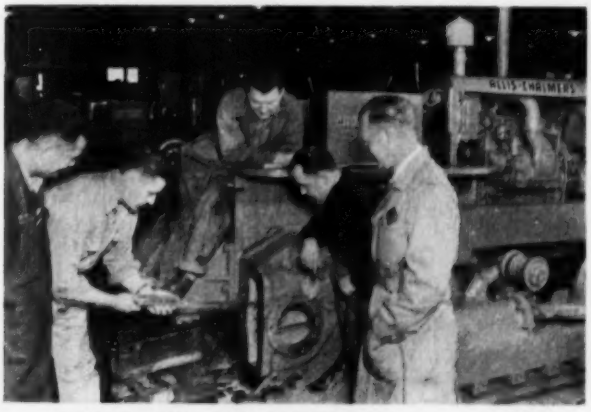
SCHEDULED CHECKUP PROGRAM — Your Allis-Chalmers dealer will help you plan a schedule for all maintenance to keep your equipment operating efficiently. You'll save on repair bills, avoid costly downtime, get far better performance, longer life from your machines.

OPERATING TIPS — Allis-Chalmers dealer servicemen are trained to give your operators all the facts they need to operate your equipment most productively. For example, one of the most important things for an operator to know — how to recognize when adjustments should be made.



SPECIALIZED FACILITIES at your Allis-Chalmers dealer include factory-approved tools and all necessary service equipment. Factory-approved methods are used to save you time and money, assure finest workmanship, to help you get full value for your equipment dollar.

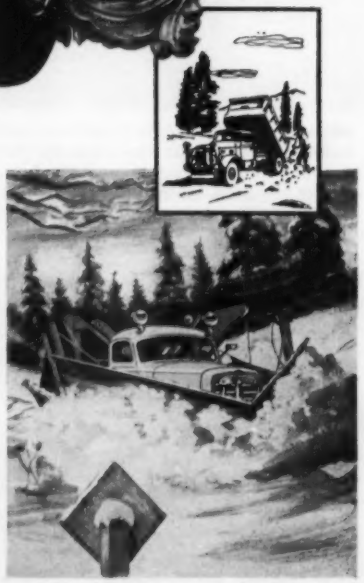
FACTORY-TRAINED DEALER SERVICEMEN have the specialized experience to help you spot trouble symptoms fast, help you prevent costly breakdowns. Their training never stops; they make it a *policy* to stay abreast of every development so they can be of real value to you. And they're ready to go when and where they're needed.



FACTORY SERVICE SCHOOL TRAINING is open to your servicemen just as it is for dealers. Training is by men who know the equipment best. Visual aids and easily understood literature are used. And your men discover that Allis-Chalmers design simplicity makes the equipment easy to learn . . . easiest of all to service.

CUSTOM-ENGINEERED—**More Tractive Power —Less Dead Weight—through Stronger, Lighter Alloy Steels and Advanced Math-Matic Design!**

This basic unit of heavy-duty driving power is designed to out-perform mass produced, mass marketed trucks on the basis of extra power, dependability and economy of operation. Advanced *Math-Matic Design*—in every feature of FWD—correctly proportions power to weight on front and rear axles . . . makes every pound of load help haul itself, turns every ounce of power into more controllable traction and greater steering safety. You'll find FWDs shouldering more than their share wherever there's tough, heavy work to be done. Let us show you how FWD fits into *your* picture . . . contact your FWD Dealer today!



BUILDERS OF AMERICA'S FWD FOREMOST HEAVY-DUTY TRUCKS

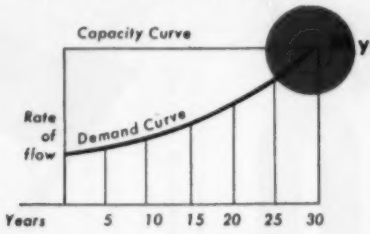
MATH-MATIC DESIGN

Write for informative, illustrated folder on FWD units in the weight category you normally use. Four and six wheel drive trucks from 14,500 to 60,000 lbs. G.V.W.

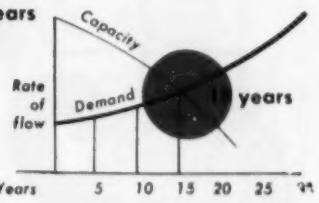
THE FOUR WHEEL DRIVE AUTO COMPANY, CLINTONVILLE, WISCONSIN, *Canadian Factory,* KITCHENER, ONTARIO

This is how Reinforced Concrete Pressure Pipe works for you in the FUTURE...

Reinforced Concrete Pressure Pipe



Certain other classes of pipe



TREMENDOUS GROWTH AND POPULATION GAINS have made many community planners and water works engineers realize that in order to satisfy future needs, their main water supply lines *must* have a high sustained hydraulic capacity.

An interesting example of foresight and long range planning is the program for enlarging the water system of the City of Burbank, California. Fully realizing that the post war years would bring unprecedented population gains to their area, the City Manager, the Planning Commission and the Engineers in the Public Service Department of the City of Burbank planned and installed additional permanent water mains in anticipation of future demands. These installations involved considerable footage of American Concrete Cylinder Pipe in sizes 16" through 36". The City of Burbank's water system totals approximately 230 miles and has reached multi-million dollar proportions.

SUSTAINED HYDRAULIC CAPACITY. The use of reinforced concrete pressure pipe manufactured by this Company assures to the City of Burbank and will also assure to your community superior design, permanence and sustained hydraulic capacity, the basic requirements of long range planning.

LET OUR EXPERIENCE HELP YOU. Our more than forty years of experience and research in the design and development of reinforced concrete pressure pipe are available in helping your community plan its water transmission project wisely for the next 50 years, or even more. You can depend upon rugged reinforced concrete pressure pipe to give years of economical service with the assurance of sustained hydraulic capacity for its exceptionally long life.

Lining American Concrete Cylinder Pipe. Lining is dense, smooth, and controlled to close tolerances. This class of pipe comprises part of main water transmission system of the City of Burbank, California.

FOUR PLANTS TO SERVE YOU

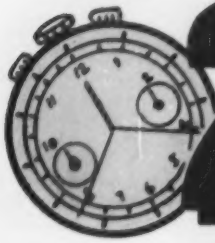
American
PIPE AND CONSTRUCTION CO.

Concrete Pipe for Water Supply Lines, Storm and Sanitary Sewers, Subaqueous Pipe Lines

P. O. Box 3428, Terminal Annex, Los Angeles 54, California

Main Offices and Plant—4635 Firestone Boulevard, South Gate, California • District Sales Offices and Plants—Oakland—San Diego—Portland, Oregon

LoDaL



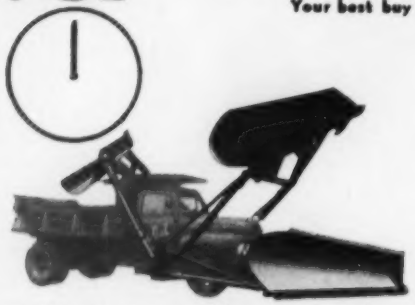
20 minute change-over

DOLLAR FOR DOLLAR
Your best buy

THE BASIC MACHINE

"3000 lb. lift"

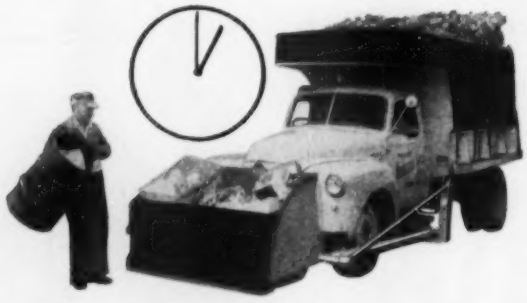
LoDaL loads, hauls and dumps sand, gravel or other materials - up to 2 yards per minute. ONE MAN - ONE MACHINE.



LoDaL's quick-lift snowplow - 10 ft. moldboard - 8 ft. swath. Rugged, direct-thrust construction.

LoDaL fluid drive pickup sweeper - 6 ft. swath, ½ yard hopper - loads to capacity of truck.

High speed, efficient snow removal - addition of side boards to standard box gives additional 3 to 4 truck capacity.



LoDaL sideboards and refuse lip make low-cost refuse collection possible . . . low lift height . . . speedy collection.

WHY BUY 5 MACHINES . . .
when 1 LoDaL with attachments will do the job?

City after city is finding LoDaL's year round utility to be the most efficient, economical and versatile answer to their problems.

LoDaL INC.

Box 1052 . Norway, Michigan

Write, Wire or Phone:

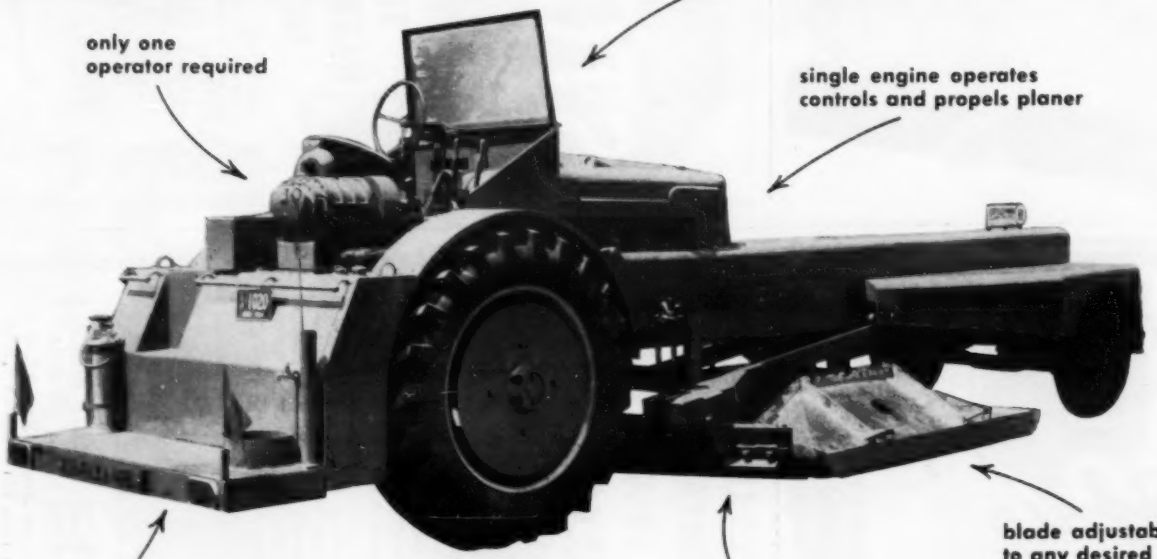
"DOLLAR FOR DOLLAR YOUR BEST BUY"

NEW

LITTLEFORD-CLARKMOORE Asphalt Road Heater-Planer

does the impossible...and does it cheaper!

engineered unit for heating and planing bituminous roads, streets and airport runways


heats and planes in one continuous operation
only one operator required
single engine operates controls and propels planer
blade adjustable to any desired cut
heats and planes path 81" wide
hydraulically operated
travels 8-inches or 88-ft. per minute

The costly hand labor that practically made regular road maintenance prohibitive has now been eliminated . . . with the introduction of the Littleford-Clarkmoore Asphalt Road Heater-Planer.

This ingenious new machine—with one man at the controls, and in one continuous operation—heats and planes off high crowns, corrugations, eliminates troughs and ruts. It performs this and many related operations as slowly as 8-inches per minute, or as rapidly as 88-ft. per minute.

And these are only a few of the many road-improving, cost-reducing advantages that Littleford engineering has built into the new heater-planer. For complete information . . .

Send today for descriptive bulletin EE-18

LITTLEFORD

LITTLEFORD BROS., INC.
500 E. Pearl St., Cincinnati 2, Ohio

"BRIGHT BY DAY — BRILLIANT BY NIGHT"

WITH

NITE-BRIGHT

"NITE-BRIGHT SIGNS" are made of heavy gauge aluminum faced with Scotchlite and give many years of the finest service. See our listing in the Municipal Index.

We can also supply embossed steel non-reflective baked enamel signs and traffic cones. We maintain a stock of steel channel posts for immediate delivery.

Write for special prices on large orders.

Red Stop sign $101

NITE-BRIGHT SIGN COMPANY
140 JAMES STREET, BRIDGEPORT 4, CONN

CELANESE CORPORATION OF AMERICA PROBLEM SOLVED WITH INERTOL® COATINGS

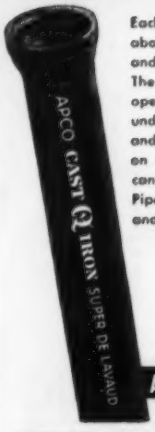
● Alum solution in the concrete tanks at Water Filter Plant, Celanese Corporation, Belvidere, New Jersey, was eating through the concrete and loosening the mortar in the brick wall behind the tanks. Celanese engineers consulted Inertol Co., Inc. The tanks have been protected with Inertol coatings for over a year now—and the problem is *licked!* No more leakage. Tanks have sure, long-term protection. Maintenance has been greatly simplified.

Inertol makes a full line of industrial paints. Each one of these coatings is formulated to maintain a specific surface—to solve a tough problem. Inertol coatings can help cut your maintenance costs. The coatings the Celanese Corporation used may be the answer to your painting problems—or perhaps Inertol FLORWEAR® is just the floor coating you're looking for. FLORWEAR is designed especially for concrete floors that take a beating from chemical fumes. It's rubber-based—chemical- and wear-resistant. Won't water-spot. Comes in four colors: light gray, medium gray, dark gray, deep red.

Today, write for fact-packed folder and color card CA-4 FREE. Just write your name, title, firm name and address in the margin of this page and mail.

Inertol
INERTOL CO., INC.
MAINTENANCE PAINTS DIVISION
485 Frelinghuysen Avenue, Newark 5, N. J.
27-M South Park, San Francisco 7, Calif.
INERTOL PROTECTION MEANS LOWER COST PER YEAR

TESTED AND RECORDED



Each length of pipe we manufacture passes through the above hydrostatic test press where it is filled with water and the pressure raised to 500 pounds per square inch. The most common water works pipe is designed for an operating pressure of 150 pounds per square inch. This undergoes the 500 pounds per square inch hydrostatic test and permanent records for each piece of pipe are kept on file for inspection by our customers at all times. You can be assured with Alabama's Super De Lavaud Cast Iron Pipe. In sizes of 3" to 24" in modern long lengths. Bell and Spigot, Mechanical Joint and Flanged Pipe.

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We Invite Inquiries to Our Nearest Sales Office
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ALABAMA PIPE COMPANY
ANNISTON ALABAMA

— EASTERN METAL FOR TRAFFIC SIGNS — EASTERN METAL FOR TRAFFIC SIGNS —

Red Stop Signs and Parking Signs

SPECIAL WARNING SIGNS for CITIES

Eastern "A" Stand with exclusive SPEED-E-LOK Folds and Locks in Place—Won't blow over

Positive protection for City Workmen

"Iron Cap" Protects your School Children Official Blue Uniform

Make Eastern Metal your One Source of Supply for All Types and Sizes of Metal Traffic Signs.
Immediate Delivery from Stock—Economical
We also carry a complete line of street name signs, U-Type steel posts, durable stanchions, and aluminum sign bolts.
Send for Illustrated Traffic Sign Folder and Price List.

EASTERN METAL OF ELMIRA, INC. Elmira Heights 1, N. Y.

— EASTERN METAL FOR TRAFFIC SIGNS — EASTERN METAL FOR TRAFFIC SIGNS — EASTERN METAL FOR TRAFFIC SIGNS

How to BOOST REVENUE on parking lots

...with Dual's new "automatic attendant"

REVENUE losses add up *big* on metered parking lots, and even on streets, when motorists park "free" on left-over meter time. But Dual now offers the *simple* answer . . .

Note the indicator flag on the meter shown. It doesn't *tell* how much time is left. It shows only "Legal Parking" (as pictured) or "Violation". Each new parker must pay in full for the time he wants . . . or risk violation!

Simple, foolproof and *effective!* What's more, this new feature *doesn't cost a cent extra* on new Dual Automatics . . . and only a nominal charge for converting previously installed Duals. No need at all to install and maintain costly, complex time-wipe-off devices.

Get complete information. Write *The Dual Parking Meter Company* (subsidiary of The Union Metal Manufacturing Co.), *Canton 2, Ohio.*

For extra value get **DUAL**
PARKING METERS

CADILLAC, MICHIGAN

cuts tax billing time 75% with Burroughs Sensimatic

Accounting Machine

Mr. Emil F. Meyer, City Clerk-Treasurer of Cadillac, famed Michigan vacation center, is also Vice President of the Michigan Municipal Finance Officers Association.

Tax bills are inserted in the Sensimatic in units of three. On each bill, the operator makes only three entries. The machine prints the total, prepares the tax roll and provides three perfect copies of each individual tax bill.

In Michigan's justly famous "Four-Season Vacationland," the city of Cadillac uses a Burroughs Sensimatic on tax accounting and water billing.

City Clerk-Treasurer Emil F. Meyer reports: "The tax billing operation used to take three people more than two weeks each time. Now, one person does the entire job on the Sensimatic in four to five days.

"With this system, there is never any reason to miss a due date. And we are assured good-looking businesslike records for the taxpayers."

Between tax billing periods the city of Cadillac uses the Sensimatic for posting tax receipts, for water billing, and for posting water receipts.

"In the time and effort it has saved us, and the increased efficiency it has brought about," Mr. Meyer says, "the Sensimatic has more than paid for itself."

For full information about Burroughs equipment, call your local Burroughs branch. Or write to Burroughs Corporation, Detroit 32, Michigan.

WHEREVER THERE'S BUSINESS THERE'S

Burroughs

THEY DON'T BURN MONEY IN SCHENECTADY

Designed by Havens & Emerson, New York, N. Y.
Constructed by McElwee-Courbis, Camden, N. J.

C-E RAYMOND FLASH DRYING SYSTEMS PRODUCING FERTILIZER

CITY	TREATMENT	NO. UNITS	SIZE OF UNITS Lb. Water per Hour per Unit	INSTALLED CAPACITY Tons Fertilizer Per Year
Baltimore, Maryland	Act. Dig.	3	6,140	29,800
Battle Creek, Michigan	Pri. Dig.	1	2,370	2,550
Chicago, Illinois				
Calumet	Activated	3	6,667	15,850
Southwest	Activated	8	21,000	148,500
Southwest Ext.	Activated	6	21,000	49,500
Edgewater, New Jersey	Pri. Dig.	1	795	150
Fond Du Lac, Wisconsin	Pri. Dig.	1	2,350	1,300
Houston, Texas	Activated	2	12,000	30,400
Lansing, Michigan	Act. Dig. & Garbage	1	6,667	6,780
Los Angeles, California	Act. Dig.	4	22,500	79,500
Recife, Brazil	Pri. Dig.	1	943	1,280
San Diego, California				
#1 Plant	Pri. Dig.	1	3,500	7,500
#2 Plant	Pri. Dig.	1	5,000	13,200
San Francisco, California	Pri. Dig.	3	6,250	36,400
Schenectady, N. Y.	Pri. Dig.	1	3,370	2,970
Sheboygan, Wisconsin	Pri. Dig.	1	3,040	3,060
Stamford, Connecticut	Pri. Dig.	1	3,330	1,780
Washington, D. C.	Pri. Dig. now Act. Dig. later	3	12,000	65,500
Wyomissing, Pennsylvania	Pri. Dig.	1	2,218	848

COMBUSTION ENGINEERING
RAYMOND DIVISION
1315 North Branch Street, Chicago 22, Illinois

Instead, the new sewage disposal plant at Schenectady, New York, *saves* money – sizable sums accruing from the sale of Orgro – Schenectady's effective soil conditioner and fertilizer composed entirely of flash-dried sewage sludge.

As in many other communities, a C-E Flash Drying System has converted what would otherwise be a bothersome liability into a revenue-producing asset. By drying, packaging and selling its sludge, and then deducting all fuel, power, labor and bagging costs from the revenue received, Schenectady nets approximately $15.00 for each ton of dry solids sold. Thus far the demand for Orgro has been so great that an average week's production is sold at the plant in a matter of hours. During the winter months, when consumer demand may drop off, Orgro will be bagged, stored and kept ready for use the following spring, on the city's parks and golf courses.

Had Schenectady elected to incinerate its sludge, not alone would all revenue be eliminated, but in addition, a cost of about $3.00 per ton would be incurred for ash disposal – a substantial item, since roughly 50% of the original dry weight of incinerated sludge remains as ash.

In communities where the character of the sludge makes it unsuitable for use as fertilizer, incineration may be the only answer. But in the many instances where these limitations do not apply, burning sludge may be equivalent to burning money.

Whether you plan to incinerate or dry, the C-E Raymond Flash Drying System allows you to do either at will. Like the communities listed at the left, you too can end your sludge disposal problems effectively and at less cost with the service-proved C-E Raymond System. For full information, contact the C-E Raymond office nearest you. A C-E specialist will be glad to help you. B-792

Eastern Office: 200 Madison Avenue, New York 16, New York • Western Office: 510 West Sixth Street, Los Angeles 14, California
ALSO FLASH DRYING AND INCINERATION SYSTEMS FOR INDUSTRIAL WASTE DISPOSAL

Good Roads INTRODUCES THE "ODELL" SPREADER

Three years ago Robert Odell, a general contractor, designed a new hopper-type asphalt and aggregate spreader for his own use, since no spreader on the market satisfied him. It worked so well that other contractors asked him to build similar machines for them. A total of five were made, and all of them have been operating successfully for the past two years.

Good Roads bought the basic design from Odell, and now manufactures and offers the "Odell" spreader as a standard item in its complete line of road construction and maintenance equipment. Except for minor changes to adapt it to factory production and strengthen certain components, it is the same unit that has been successfully field-tested by Odell and others.

AGGREGATE AND ASPHALT SPREADER VERSATILITY, ACCURACY AND SPEED

Outstanding in the "Odell" Spreader is its extreme simplicity of design—permitting a single low-priced machine to perform a wide variety of spreading operations easily and quickly.

It hooks to any standard dump or semi-dump truck in just a few seconds without the use of truck-mounted attachments and is transported between jobs on the truck tailgate. When spreading, the hopper rides on wide steel rollers which travel over sub-grade or base without digging or gouging. Smooth, accurate spread is assured by a "strike-off" unit that floats free of the hopper, on 6-ft. long steel runners.

Hot or cold-mix asphalt, bank-run gravel, coarse or fine slag and limestone, cinders and practically any kind of base materials can be spread to any thickness from feather-edge to 8 inches. Over-all width is 8 ft. 6 in. for laying an 8 ft. spread. Unit may be blocked off for any width under 8 feet, and can be extended to 10 feet in a matter of seconds.

Sturdy all-steel welded construction design provides durability with light weight. Low initial cost and exceptionally fast operation means big savings on all kinds of paving jobs from pathways or small driveways to large highways, parking lots, airport taxi strips or runways.

Good Roads "HANDY" AGGREGATE SPREADER

For accurate, smooth laying of sand, gravel, cinders, stone, etc. Good Roads offers the reliable "Handy" aggregate spreader. Flexible keyboard gate of tempered spring-steel fingers permits oversize particles in material to drop through without marring the spread pattern. Spread is controlled up to three inch depth by micrometer adjustment.

All controls are conveniently located for simple one-man control. One man can hook-up, start, stop, forward or reverse from one control point.

For complete information write to:

GOOD ROADS MACHINERY CORP., MINERVA, OHIO

ACT NOW!

eliminate "orphans" from your fire protection system . . . with

IOWA

GATE VALVES and FIRE HYDRANTS

Don't Gamble on Obsolete Equipment

...BE READY FOR ANY EMERGENCY!

"Forever" is such a long, long time. In this H-bomb age, we hesitate to promise that replacement parts for Iowa Hydrants and Gate Valves will be available "forever." But we'd like to—because, actually, replacements are readily available today for every part of every hydrant and gate valve Iowa ever has made. That's a record that extends way back to 1909—almost a half century ago It's a record we plan to maintain. So, this much we can say: You're as "safe as safe can be" in replacing NOW with time-proved Iowa. For full details, please write TODAY!

IOWA HYDRANTS

Provide full, truly unrestricted water way.

Open with the pressure for faster water delivery.

Close *against* the pressure to eliminate water hammer, provide flushing action.

Assure positive drainage.

Are available for any type of connection.

All working parts removable through top—no digging or special tools required.

Meet all A.W.W.A. specifications.

IOWA GATE VALVES

Double disc, parallel seat.

Positive wedging action for efficient, no-leak closing.

Gates hung loosely from stem nut—no binding.

Rugged, time-proved design means long life, low service costs.

Available with bell, flange, or mechanical joint connections to fit any existing or planned installation.

Meet all A.W.W.A. specifications.

IOWA VALVE COMPANY

Oskaloosa, Iowa • *A Subsidiary of James B. Clow & Sons*

PHILADELPHIA REORDERS ROTO-PAC UNITS

NOW! CITY EMPLOYS 204 ROTO-PAC REFUSE COLLECTION UNITS

PURCHASES BASED ON ROTO-PAC PERFORMANCE . . . 650,000 LBS. MORE REFUSE COLLECTION PER DAY

Sometime ago, and after a two-year test period, the City of Philadelphia purchased a fleet of 184 Roto-Pac Refuse Collection units.

Now they have increased this fleet to a total of 204 Roto-Pac Units.

Performance is Roto-Pac's star salesman.

Officials of the City of Philadelphia have established that the escalator-type Roto-Pac collects 650,000 pounds *more refuse per day* than rear-door compaction units.

Your city can achieve faster, cleaner and more efficient refuse collections through the continuous operation and greater compaction of Roto-Pac . . . the really modern refuse collection unit.

★ *CHECK THESE FEATURES* ★

- AUTOMATIC CONTINUOUS LOADING
- AUTOMATIC CONTINUOUS PACKING
- GREATER COMPACTION
- LOWEST LOADING HEIGHT
- LOWEST OPERATING PRESSURE (LESS ENGINE WEAR)
- HANDLES STRAIGHT ASH LOADS
- DOUBLE PIVOT TYPE TELESCOPIC BODY HOISTS
- LOWER OPERATION COSTS
- DOUBLES AS SNOW-HAULING VEHICLE

For further information...

or a demonstration ...write

CITY TANK CORP.
53-09 97TH PLACE
CORONA, LONG ISLAND, N. Y.

SALES AND SERVICE IN ALL PRINCIPAL CITIES

LOW COST

"CENTURY"® PIPE

is made of asbestos fiber and portland cement—two practically indestructible materials. Its extreme durability means extra long life. Highly resistant to soil corrosion, immune to tuberculation and electrolysis, it assures maintenance-free service and consistently lower pumping costs.

More and more cost and tax-conscious communities are turning to "CENTURY" Pipe. We will gladly furnish information about its advantages. Write today for booklet "Mains Without Maintenance."

QUALITIES THAT MAKE "CENTURY" PIPE ECONOMICAL, TROUBLE-FREE, LONG-LIVED

1. NON-TUBERCULATING
2. NON-CORROSIVE
3. EXCEPTIONALLY STRONG
4. DURABLE
5. IMMUNE TO ELECTROLYSIS
6. TIGHT JOINTS
7. SMOOTH BORE
8. EASILY, QUICKLY LAID
9. LIGHT WEIGHT
10. LOW COST

"Century" Pipe meets the A.W.W.A., A.S.T.M. and Federal Specifications for asbestos-cement pressure pipe.

KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA

Nature made asbestos . . . Keasbey & Mattison has made it serve mankind since 1873

Water is vital...

Badger meters conserve it better!

IN only one year, more than *26-million tons of paper* are required to fill the needs of the nation . . . to help business operate, to serve personal needs, to bring your daily newspaper to your door. Yet it takes *more water than wood* to produce this paper.

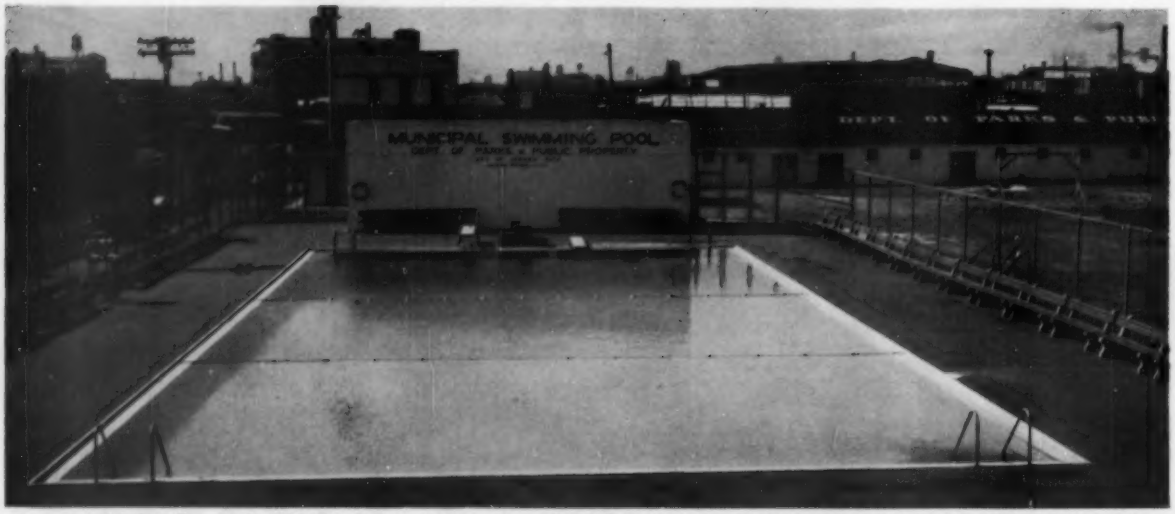
The Badger water meters used in America help save water for this vital need . . . measure water accurately for homes and industry . . . provide a precise check of water usage and waste. And they make certain that users pay fairly for the water consumed . . . help make water departments self-supporting.

As a result of their superior performance through the years, Badger meters are the favorites of waterworks men everywhere... famous as the meters that save water, work and money.

Badger Water Meters

Badger Meter Mfg. Co.
Milwaukee 45, Wisconsin

"Measuring the water of the world for 50 years"



A SINGLE SOLUTION TO A COMPLEX COMMUNITY PROBLEM

Koven all steel swimming pools

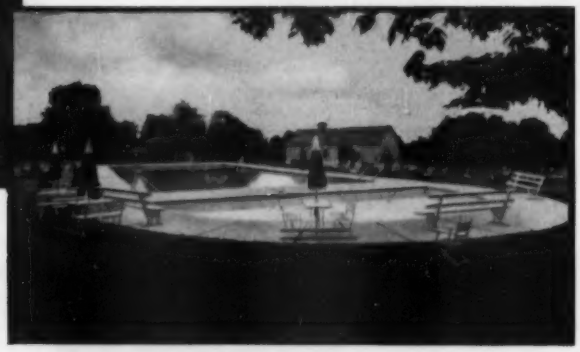
HEALTHFUL RECREATION for EVERYONE

Faced with the problem of supplying recreational facilities which meet the needs of various age groups, more and more leading city planners are building their community recreational programs around KOVEN All Steel Swimming Pools — thus enabling young and old alike to benefit from a single community activity.'

Leak-proof KOVEN Pools owe their superiority to a rugged welded steel construction which not only frees them from weaknesses found in other types of pools, but also reduces upkeep to only an occasional coat of paint. That's why KOVEN All Steel Swimming Pools remain in peak condition through years of constant use.

Combining beauty with practicality, these durable pools come in many sizes and designs — are easily adapted to fit any landscaping. All details — from selection of pool to construction and installation — are handled by KOVEN, leading steel fabricators for over 70 years.

Send for our free, color-illustrated booklet.



PLANTS:

Jersey City, N. J.

Dover, N. J.

Trenton, N. J.

KOVEN STEEL SWIMMING POOLS, INC.
a division of L. O. KOVEN & BRO. INC. 154 Ogden Ave. Jersey City 7, N. J.

- **The pool with the lowest maintenance**
- **The only leak-proof type built**
- **Indoor and outdoor models**

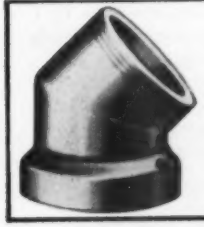
This Clay Pipe Sewer in Texas City was designed by Joe J. Rady & Co., consulting engineers, who also supervised the installation. The line runs along Galveston Bay. At some points it had to be laid in quicksand six feet below sea level.

323 MILES of CLAY PIPE

Provide Modern Sewerage for Galveston County, Texas

More than 1,700,000 feet of Clay Pipe have been installed in Galveston County in the past 18 years to meet the needs of expanding industry and a growing population. When Joe J. Rady & Co. first began work in Galveston in 1937, only two cities in the county had sewerage systems. Today, Clay Pipe sewerage systems have been installed in every community of 1,000 population or more. Referring to infiltration, which has always been a big problem in this area, Mr. Rady says: "This naturally dictated the *exclusive use of Vitrified Clay Pipe,* which has been specified on each and every sewerage collection system."

Next time you specify, buy, or install sewer pipe, remember this fact: engineers who handle the big, long-range projects specify and recommend Vitrified Clay Pipe. *It's guaranteed for 50 years. It never wears out.*



CLAY PIPE FITTINGS are available to help solve every installation problem. This Cut Curve, for example, is available in sizes through 36".

Vitrified CLAY PIPE

NATIONAL CLAY PIPE MANUFACTURERS, INC.

1520 18th St. N.W., Washington 6, D. C.

311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
206 Connally Bldg., Atlanta 3, Ga.

C-754-2

Digester and control building of the new Hobart plant completed in August, 1953

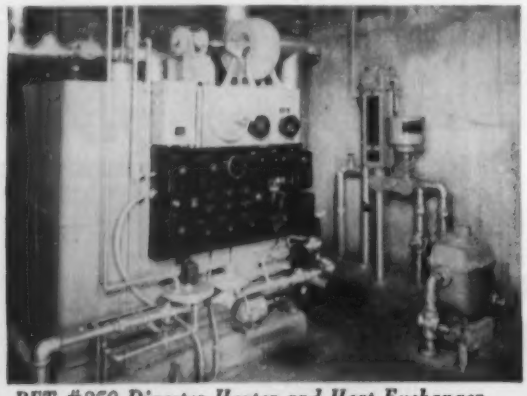
Hobart, Indiana Builds for Modern Sewage Treatment

WITH PFT "CONTROLLED DIGESTION"

Designed for a population equivalent of 12,000, Hobart's impressive new activated sludge plant provides modern, effective treatment. A complete line of PFT equipment is installed for up-to-date "controlled digestion!"

A *PFT Floating Cover* is installed in the 50′ digester (49,880 cu. ft. capacity) for simplicity of operation, positive scum submergence and safe utilization of gas. A *PFT Cover Position Indicator* with high and low level alarms shows the digester liquid level at a glance.

A *PFT Supernatant Selector* with *Gauge, Sight Glass and Sampler* unit provides for automatic withdrawal of the best digester liquor.



PFT #250 Digester Heater and Heat Exchanger

An effective part of Hobart's "controlled digestion" is the *PFT Heater & Heat Exchanger* (250,000 B.t.u. per hour). Fired by gas *or* oil, it cuts fuel costs by utilizing all sludge gas produced, switching to oil only when necessary to maintain optimum temperatures of 90° to 95°.

PFT Gas Safety Equipment in the plant includes: 3" Waste Gas Burner; Flame Trap; Pressure Relief with Flame Trap; Flame Cell; Drip Taps; Gas Pressure Gauge.

At Hobart, as in all its installations, PFT assisted consulting engineers by showing the adaptability of its equipment in meeting specific plant requirements. PFT checks the installation of its equipment and stands squarely behind its successful operation.

Design of plant by / *Consoer, Townsend & Associates, Chicago*

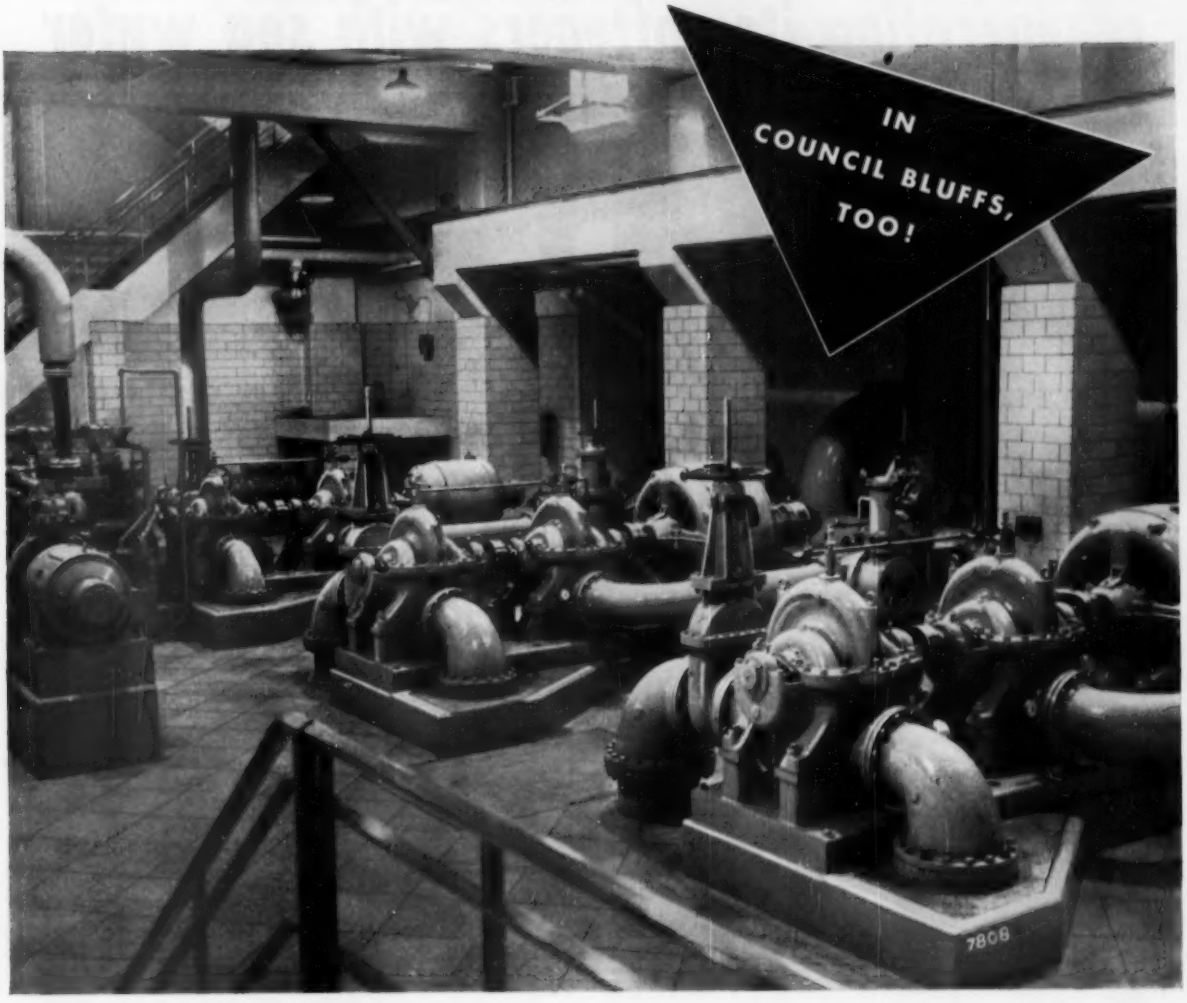
P.F.T.

waste treatment equipment exclusively since 1893

PACIFIC FLUSH TANK CO.
4241 Ravenswood Avenue
Chicago 13, Illinois

PORT CHESTER, N. Y. • SAN MATEO, CALIF. • CHARLOTTE, N. C. • JACKSONVILLE • DENVER

DE LAVAL pumps America's water...



In Council Bluffs, Iowa, as in more than 80% of America's municipal stations, De Laval centrifugal pumps are faithful public servants.

On the line are two motor-driven De Laval 14/12 units. Each unit has two pumps in series designed for 4,500 gpm against a total head of 245 feet at 1,200 rpm. Another pumping unit, dual driven by a gas engine at one end and a motor at the other, consists of two De Laval 12/10 pumps in series. Operating conditions for these are 3,750 gpm against a head of 235 feet at 1,200 rpm.

Fifty-three years experience in pump building, during which time De Laval has introduced numerous "firsts" in pump design, is the reason for this nation-wide preference.

NOTE:

Have you considered the dollars and cents savings you can make by replacing your old pumps with new, more efficient De Laval units? Write to De Laval for Pump Fax bulletin which includes a valuable "power savings" chart.

DE LAVAL *Centrifugal Pumps*

DE LAVAL STEAM TURBINE COMPANY

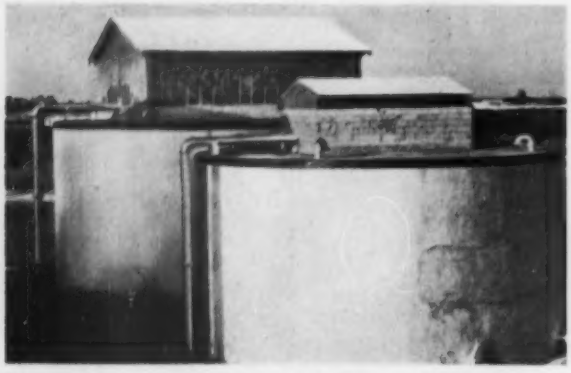
866 Nottingham Way, Trenton 2, New Jersey

DL 260

HOLLYWOOD (*Florida*) SAVES $32,980 A YEAR

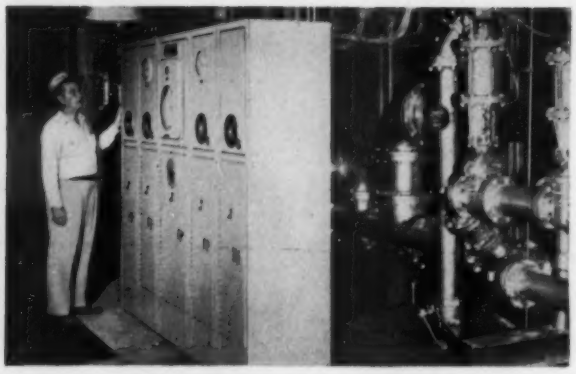
regenerating its softeners with sea water

1. Pumps draw sea water from wells beneath this station. Being inland, these wells deliver a partially filtered sea water. (Regenerating costs are now $25 less per million gallons than when dry salt was used.)



2. To prevent marine growths which would foul equipment, the sea water is aerated and chlorinated.

3. Sea water then passes through Permutit pressure filters (left) and is ready for regenerating the Permutit softeners (right). Sea water pumpage is kept to a minimum because high-capacity Permutit Q, used in the softeners, requires less salt for regeneration.



4. City Engineer George A. Gieseke inspects the Permutit control panel. It backwashes, regenerates and rinses the 4 newest softeners and places them on the line . . . *all without aid from the plant operator!* Two men per shift operate the entire water plant.

5. Hollywood is growing fast. Their first four Permutit softeners went on the line twenty years ago. Now there are 12 . . . and plant space for more. "We're in good shape," says City Engineer Gieseke.

It's easy to see why Consulting Engineers *Reynolds, Smith & Hills* chose Permutit equipment . . . for its long service life and low operating costs. And we'll be glad to help you make sure your water supply is "in good shape" for the future. Write to: Dept. AC-2, The Permutit Company, 330 West 42nd Street, New York 36, New York.

WATER CONDITIONING HEADQUARTERS

PERMUTIT

Armco Sanitary Sewer Solves Bad Foundation Problem

Bad foundation conditions sold the city of Jeffersonville on the use of Armco ASBESTOS-BONDED Pipe for its sanitary sewer outfall.

E. H. Hughes Company, Contractors
Boyd E. Phelps, Inc., Consulting Engineers
William C. Goyne, City Engineer

Jeffersonville, Indiana, is investing over two million dollars in a new sewer system. Part of this, a 4,800-foot sanitary sewer outfall from the sewage-treatment plant to the Ohio River, is in an area where a high water table resulted in extremely unstable foundations.

Alternate designs were prepared for both Armco ASBESTOS-BONDED Corrugated Metal Pipe and a monolithic structure. Armco Pipe got the job because the long lengths and sturdy joints solved the foundation problem efficiently and economically.

The wisdom of this decision was borne out in the ease and speed with which the contractor placed the light-weight sections of Armco Pipe. To illustrate the foundation hazard, one contractor's backhoe sunk in the mire to above the cab before it could be rescued.

The 4,800 feet of Armco ASBESTOS-BONDED Pipe was 27 inches in diameter, supplied in 20-foot lengths and joined with bolted band couplers. Depth of line varied from 3 to 14 feet.

Installation of Armco ASBESTOS-BONDED Pipe was easily handled by a small crew.

AN ARMCO SEWER FOR EVERY NEED

There is a wide selection of Armco Sewer Structures to satisfy your requirements. Standard Armco Corrugated Metal Pipe and Pipe-Arch are supplied in a choice of coatings to solve erosion and corrosion problems. Armco MULTI-PLATE Pipe, Arch and Pipe-Arch meet needs for larger structures. All are available in a wide size range. Write us for details. Armco Drainage & Metal Products, Inc., 3965 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

ARMCO SEWER STRUCTURES

ARMCO®

● Something has been done about

This new revolutionary method for handling huge quantities of rubbish on long hauls offers tremendous savings.

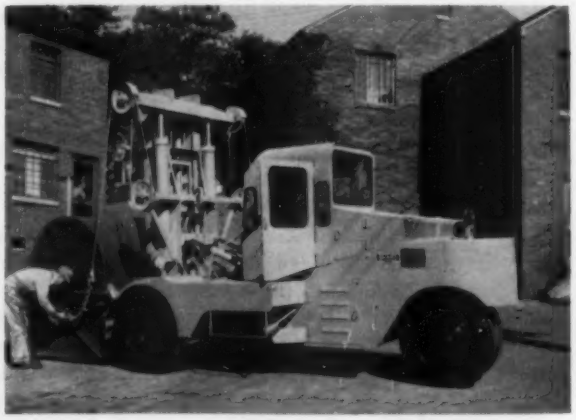
With this announcement we introduce the new Dempster-Dumpster GRD 304, designed to handle large Dempster-Dumpster Containers in combination with a big capacity trailer. It may be the solution to your problem of handling trash and rubbish over the long haul from points of accumulation to the dump. Here is how it works:

1. You replace inadequate, unsanitary and costly conventional trash cans, barrels, etc. in heavy rubbish production districts such as housing areas with big Dempster-Dumpster Detachable Containers. These containers range up to several times the capacity of the average dump truck body. (In one large housing area 18 Dempster-Dumpster Containers are now doing the job that formerly required 440 conventional cans.) Containers have self-latching doors opened by the tenants for depositing refuse, then close, sealing up the trash . . . eliminating unsanitary conditions, fire hazards, rats and scattered trash by winds and scavengers.

The photo at right shows the GRD 304 operator attaching lifting chains to a loaded 8 cu. yd. Apartment Type Container in a large housing area. The container is then hoisted hydraulically to carrying position, as shown above. Note the trailer near-by in background. The load is then placed in high position for dumping rubbish in trailer as shown in large photo at right. Several containers will be serviced in this same manner before trailer proceeds to another convenient loading point.

2. On schedule, this fast-moving new Dempster-Dumpster and a 40 to 50 cu. yd. trailer truck, with or without compaction, serve the containers. With its hydraulic tricycle steering, fingertip control and short overall length, this Dempster-Dumpster features quick and easy maneuverability in handling the big containers, one after another. Only two men—the Dempster-Dumpster operator and the trailer-truck driver—are required for the entire operation. The Dempster-Dumpster picks up each container, moves it to trailer and dumps the waste materials. The trash and rubbish from one to several housing areas can be loaded into one big trailer.

This new system offers a great opportunity for low cost, sanitary rubbish collection. It enables you to eliminate trucks standing idle, eliminate loading crews and costly re-handling of trash and rubbish. Write us for complete information today! Manufactured exclusively by Dempster Brothers, Inc.



DEMPSTER DUMPSTER SYSTEM

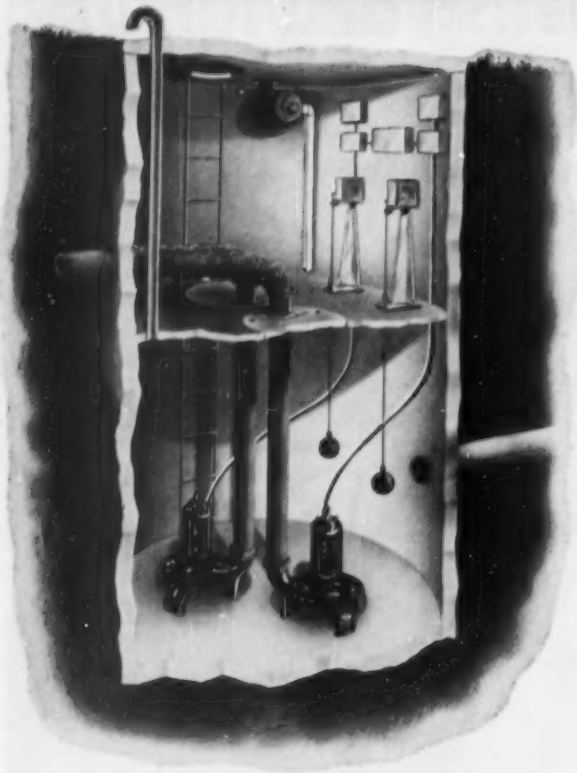
DEMPSTER BROTHERS

the Long Hauls of Trash and Rubbish

THE DEMPSTER-DUMPSTER SYSTEM has proved its ability to: Cut costs of equipment and operation . . . eliminate standing idle time and eliminate re-handling of trash and rubbish —each Dempster-Dumpster Container is pre-loaded where rubbish generates . . . increase efficiency, sanitation and good housekeeping!

825 DEMPSTER BUILDING, KNOXVILLE 17, TENNESSEE

The SUBMERSIBLE SEWAGE EJECTOR



Engineered for

HEAVY DUTY INDUSTRIAL DRAINAGE

The WEIL NON-CLOG Screenless Submersible Sewage Ejector with the BLADELESS impeller will pump ALL sewage and industrial waste — even rags.

Ideal for installation where flash floods caused by heavy rainfall create a heavy drainage load. Operates completely submerged. The motor is water cooled, the entire unit water-proof.

The motor, hermetically sealed, the housing, drive shaft and impeller are an integral unit. Sealed bearings are especially lubricated for five year operation without attention.

Illustration shows an economical outdoor installation which does NOT require a PUMP HOUSE to mar the landscape. This reduces the overall cost of an outside pumping station. Indoor installation does not clutter up valuable floor space with pump motors, controls, etc.

Capacities: 35 to 2,000 GPM with heads to 70 feet
Discharges: 3", 4", 5" and 6"—½ to 25 H.P. motors

Send for Bulletin SE 860 C with plans and specifications for various types of underground installations.

weil PUMP COMPANY
1518A NORTH FREMONT STREET • CHICAGO, ILLINOIS

Rx PRESCRIPTION FOR BETTER TRAFFIC CONTROL

Traffic Control, parking, and parking enforcement can become an efficient and economical operation in your city —when you install the dependable KARPARK TWIN-O-MATIC or UNIMATIC parking meters. They're superbly built by the famous HERSCHEDE HALL CLOCK COMPANY, makers of America's finest clocks.

FLEXIBLE—
tailor-made to suit your own requirements for coin combinations and time intervals.

EFFICIENT—
simple to operate, highly visible for easy enforcement, ruggedly built for accurate timing in any kind of weather.

ECONOMICAL—
provide substantial savings in law enforcement, maintenance, and replacement.

KARPARK TWIN-O-MATIC
Times two cars with one installation. Adjusts to any desired change in regulations. Reduces maintenance and collection costs to unheard-of lows. Ruggedly built for long life.

KARPARK UNIMATIC
For single car parking. Can be used for an entire system of single car parking, or, when used with Twin-O-Matic, can be placed at street ends and special single locations.

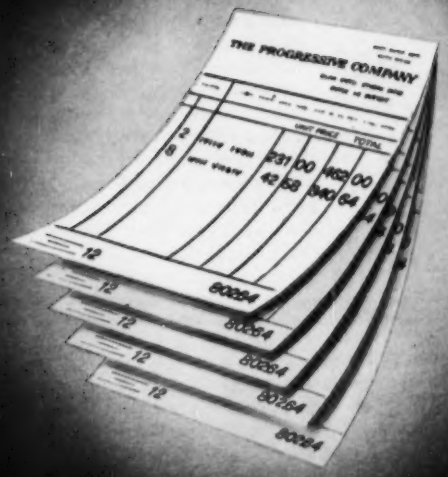
Available with
Automatic Dump System, Sealable Boxes, or Open Top Boxes.

For complete data, write to

THE KARPARK CORPORATION
CINCINNATI 6, OHIO

In Canada TWIN METER CO. OF CANADA, LTD. 5002 Park Avenue, Montreal 8, Quebec

new!



NCR *paper* (No Carbon Required)

Makes Copies *without* Carbon!

National has important news for business everywhere! The duplicate copies you see above were made *without* carbon paper! This is made possible by use of a special paper developed by the research laboratories of The National Cash Register Company. It is called "NCR Paper" (No Carbon Required).

NCR Paper puts an end to irksome handling of carbon paper — inserting, removing, storing.

Saves Time, Avoids Smudges. Faster. Can't smudge copies or fingers.

Making multiple records is now as easy as picking up 3, 4, (or more) forms from a stack and inserting them in a typewriter or business machine. And NCR Paper provides *exactly* the same advantages when making copies by hand (receipts, sales slips, guest checks, etc.).

Better Copies. When forms are placed together and written on — by typewriter, business machine, or by hand — clear, clean copies are made without carbon paper.

Ends Carbon Paper Disposal. With NCR Paper, troublesome removal and disposal of used carbon sheets are avoided.

Try the new NCR Paper and be amazed at the new ease, simplicity, cleanliness and time-saving it brings to multiple copying.

Contact your local business forms printer for NCR Paper — or your nearby National representative — or write to The National Cash Register Company, Dayton 9, Ohio.

TRADE MARK REG. U.S. PAT. OFF.

National

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ADDING MACHINES • CASH REGISTERS

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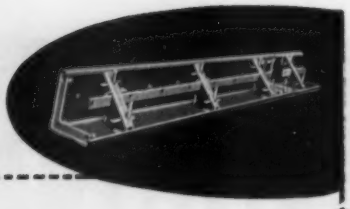
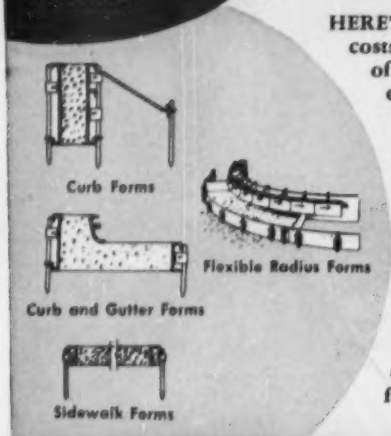
Get the *"Complete Package"* of BLAW-KNOX UNIVERSAL FORMS

SAVE HALF

ON CURB, GUTTER AND SIDEWALK JOBS





HERE'S the fastest way to cut concrete forming costs you ever saw. *One "Complete Package"* of Blaw-Knox Steel Forms handles *every* concrete curb, curb and gutter or sidewalk job, from simple straight work to curved or serpentine shapes. They're standardized for complete interchangeability! You can use them over and over again in combinations to meet an almost endless variety of specifications. Expensive carpentry, especially on curves, is eliminated. You save on costly materials, too. Easy to set, strip, handle and transport. Maintenance is practically non-existent. See your Blaw-Knox distributor for additional details.

Blaw-Knox Heavy-Duty Road and Airport Forms

You get faster form setting, always *true to line and grade*, with Blaw-Knox Self-Aligning Steel Paving Forms. Available in heights of 8" or more, or in Dreadnaught Forms under 8" height. 12" x 12" Heavy-Duty Forms and Airport Paving Forms in sizes above 12" designed for the thicker slabs of modern airport runways.

BLAW-KNOX COMPANY
BLAW-KNOX EQUIPMENT DIVISION
PITTSBURGH 38, PA.
Offices in Principal Cities

Ask about the Blaw-Knox "COMPLETE PACKAGE" of CONCRETE PAVING and READY-MIX EQUIPMENT

MUNICIPAL ENGINEERS—**Cut the high cost of labor and materials with strong, versatile, easy-to-use *steel* forms. Blaw-Knox can supply you with the greatest variety of standard or special forms available. Write today for Bulletin 2259 . . . 24 pages of illustrated form set-ups and detailed instructions on how to use them for every type of work.**

EXPANDING ROOT CUTTER SEWER CLEANER

Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Open and in action removing roots and caked sediment like this.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. Nappanee, Ind.

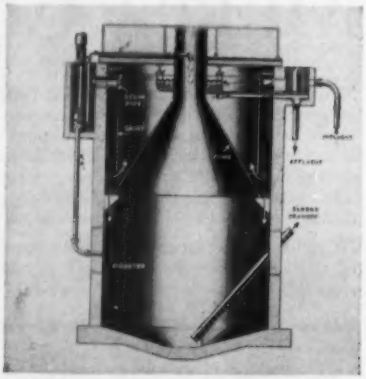
A Practical Sewage Plant for the Small Community -The SPIRAGESTER

The Spiragester is the kind of little city sewage treatment plant that practical men appreciate.

. . . **It combines** primary settling with the digester in a simple, compact structure (see drawing below).

. . . **It is simple** to build, flexible to operate, and an efficient performer.

. . . **It represents** "blue chip" long-term investment. You don't outgrow a Spiragester. You simply turn it into a digester and install separately one of our fast-acting Spira-flo Clarifiers and your problems of increased flows are solved.



The Spiragester writes a record that speaks for itself. Let us show it to you.

If you have a larger plant troubled with overload problems, write us about them also. We have the men and equipment to give you the answer.

WRITE TODAY FOR BULLETIN 134

LAKESIDE ENGINEERING CORPORATION
222 W. Adams St. Chicago 6, Ill.

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Here's the new, clean way to make copies
It's AZOGRAPH—a patented, low-cost way to produce copies and—for the first time—a process that is completely clean from start to finish.
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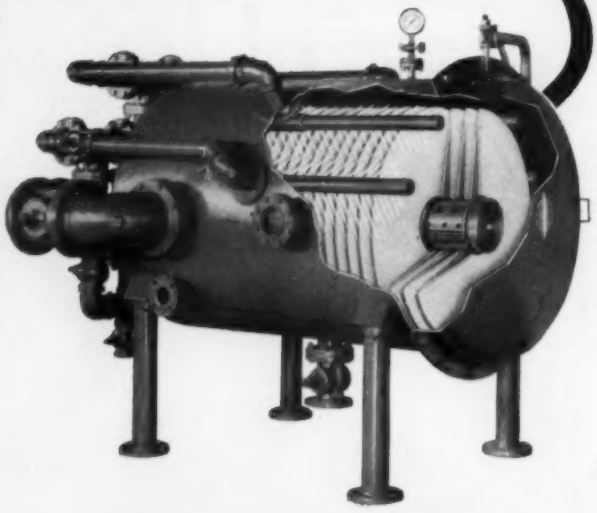
A new trend in municipal water filtration—

The SPARKLER DIATOMITE FILTER MODEL SCJ

has been highly successful in installations now in operation



Reduced operating cost due to long filtering cycles and fast backwash cleaning, together with a remarkably low bacteria count requiring a minimum of chlorination, are features that make this new type filter worthy of the attention of all waterworks engineers.

With every backwash cleaning, the used filter cake is washed out with the residue, and a fresh pre-coat of diatomite applied to the filter plates, providing a completely new sanitary filtering media with each cleaning.

This filter removes all silica, sand, algae, organic matter, silt, etc., from the raw water, and bacteria is reduced up to 80% and even more in some cases. The high quality of water obtained will raise the standard of water produced by some municipal water systems now using old methods of filtration.

Practically any volume of city water can be filtered economically in the Sparkler SCJ filter. Single units capable of handling 5,000,000 gallons of water a day are available. Multiple units can be engineered into a system for larger requirements.

Less than 0.2% of water is required to backwash and clean the largest filter units and a complete fresh precoat of diatomite can be applied and the filter ready to resume operation in 15 minutes.

Operators can be easily trained, no highly skilled specialized personnel is required to insure efficient performance.

Write for plans and prices on your requirements. Address Dan Baldwin for personal service.

SPARKLER MANUFACTURING CO.

Home office and plant, Mundelein, Ill.

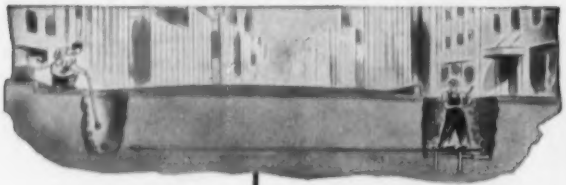
SPARKLER INTERNATIONAL, LTD.

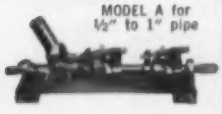
Plants at Galt, Ontario, Canada — Amsterdam, Holland

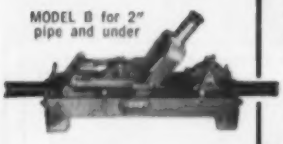
Manufacturers of industrial filters for over a quarter of a century.

Trojan Pipe Puller & Pusher

installs or renews pipe under pavement *in half the time* required by any other machine!







Exclusive continuous action, which eliminates all resetting of grip, does the trick!

The Trojan combines pushing and pulling operations in one machine—keeps pipe continuously moving—lets you install 40' services in as little as 20 min.

Model A needs only 5' trench. One man can easily install the average service. 15 tons of pushing pressure possible.

Model B is reversible in 30 seconds—has 3 speeds for different soils. New dog with individual inserts cuts maintenance.

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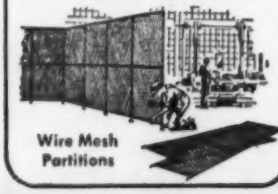

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Stewart IRON and WIRE FENCES

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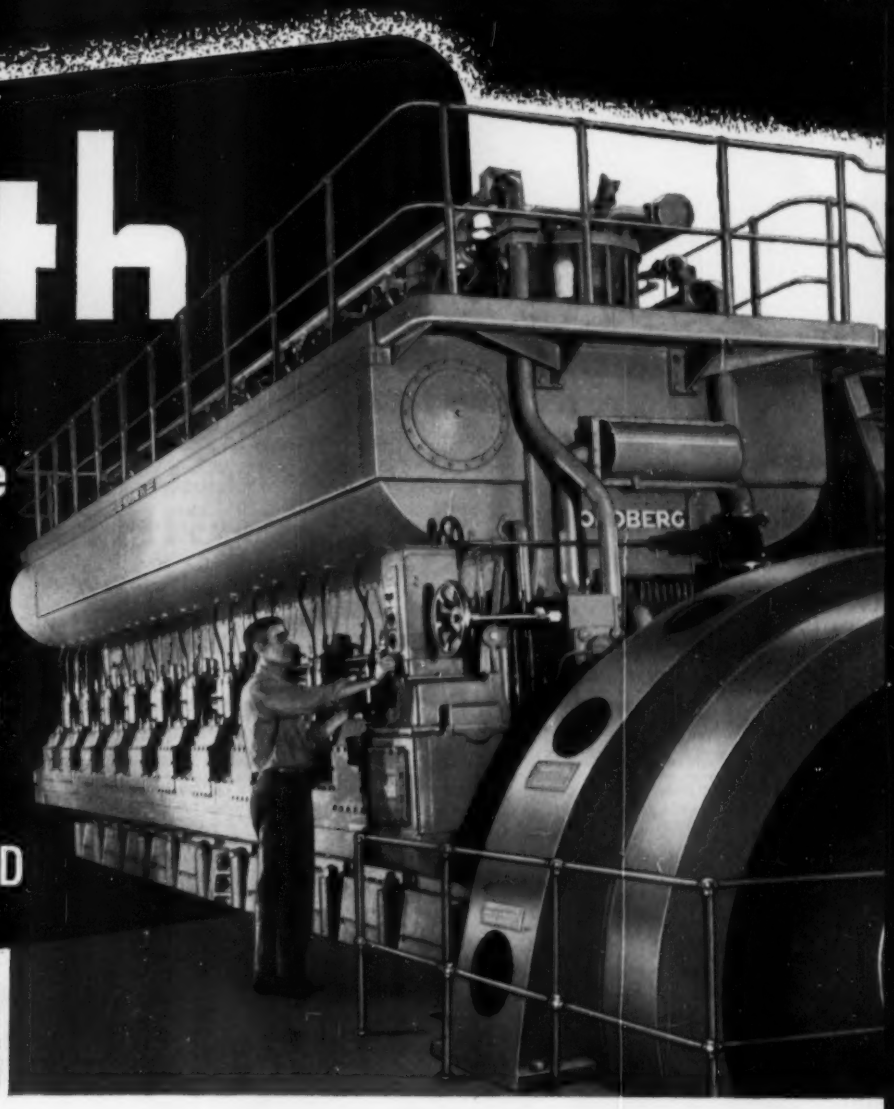

• One of the fastest growing towns in the United States, Garland, Texas is composed of over 17,000 progressive minded citizens. Just 14 miles northeast of Dallas, Garland is located in the heart of the north Texas rich blackland farming region.

In keeping with this rapid growth, and with an eye to the future, responsible officials have made sure that Garland's power plant has maintained a steady increase in capacity, to meet the ever-increasing power demand.

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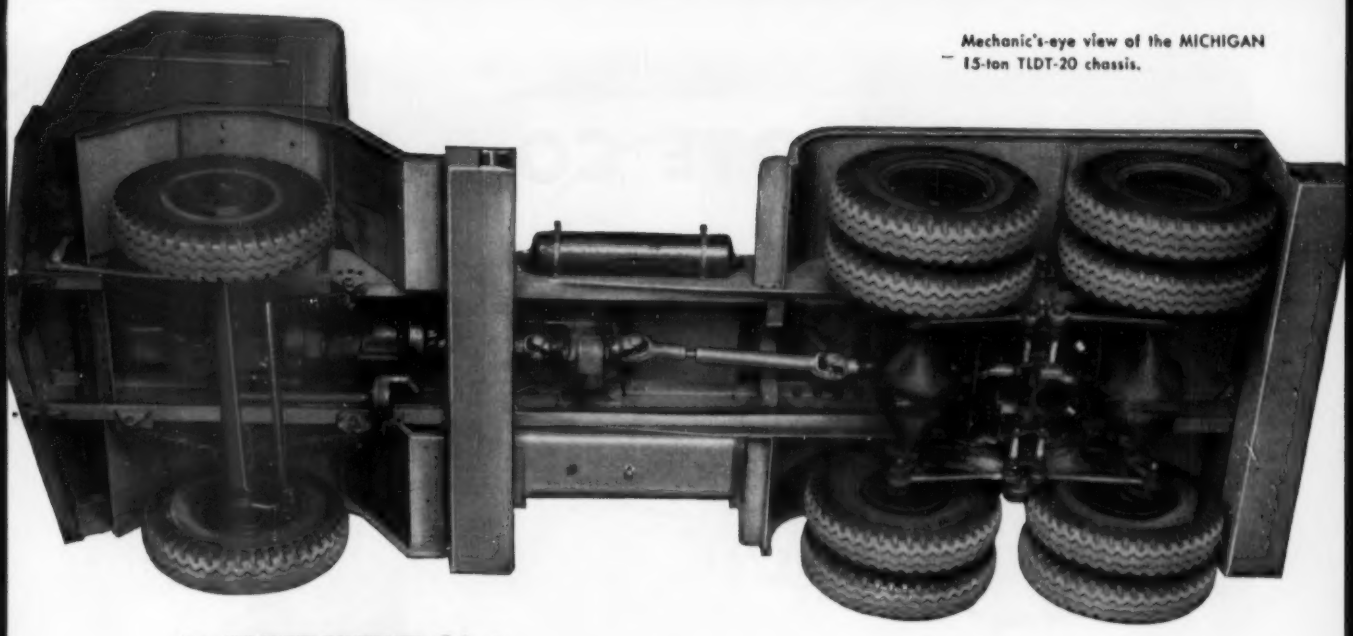
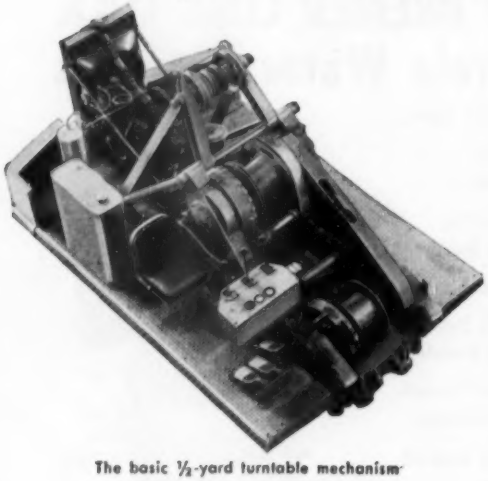


Mechanic's-eye view of the MICHIGAN 15-ton TLDT-20 chassis.

NEWS!... More Quality Features

are Standard Equipment on MICHIGAN

½ yard models than on any comparable machine



The basic ½-yard turntable mechanism —maximum service accessibility.

In your point-for-point comparison (a smart buying tactic!) take special note of these great value features—"extras" on many other makes, standard on MICHIGAN ½ yard Truck Excavator-Cranes.

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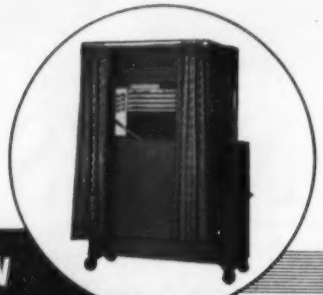

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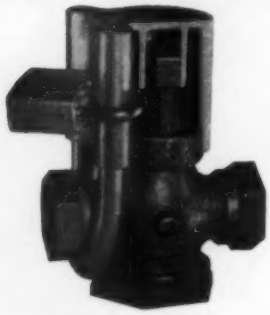

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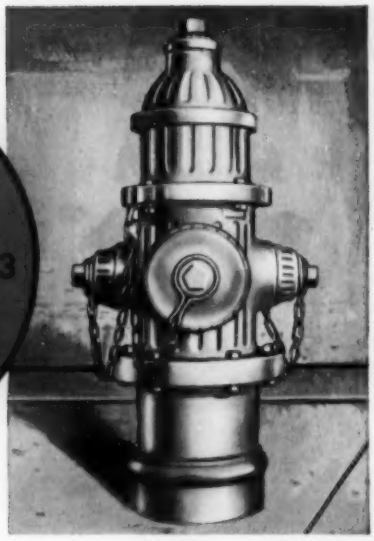

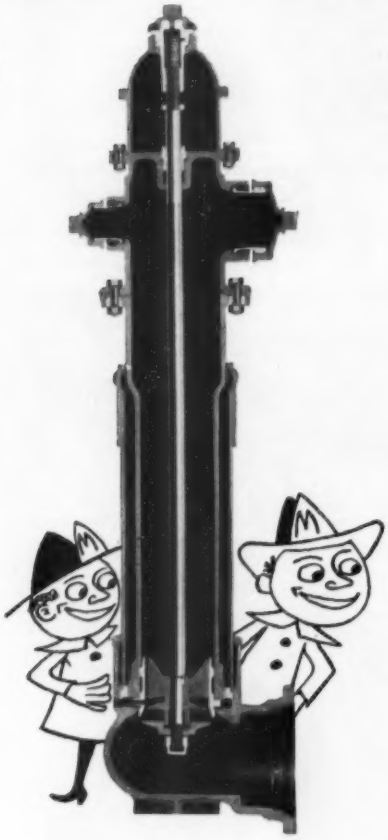

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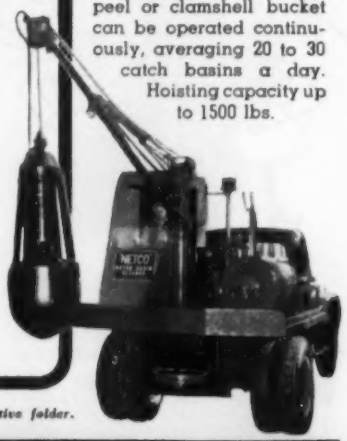

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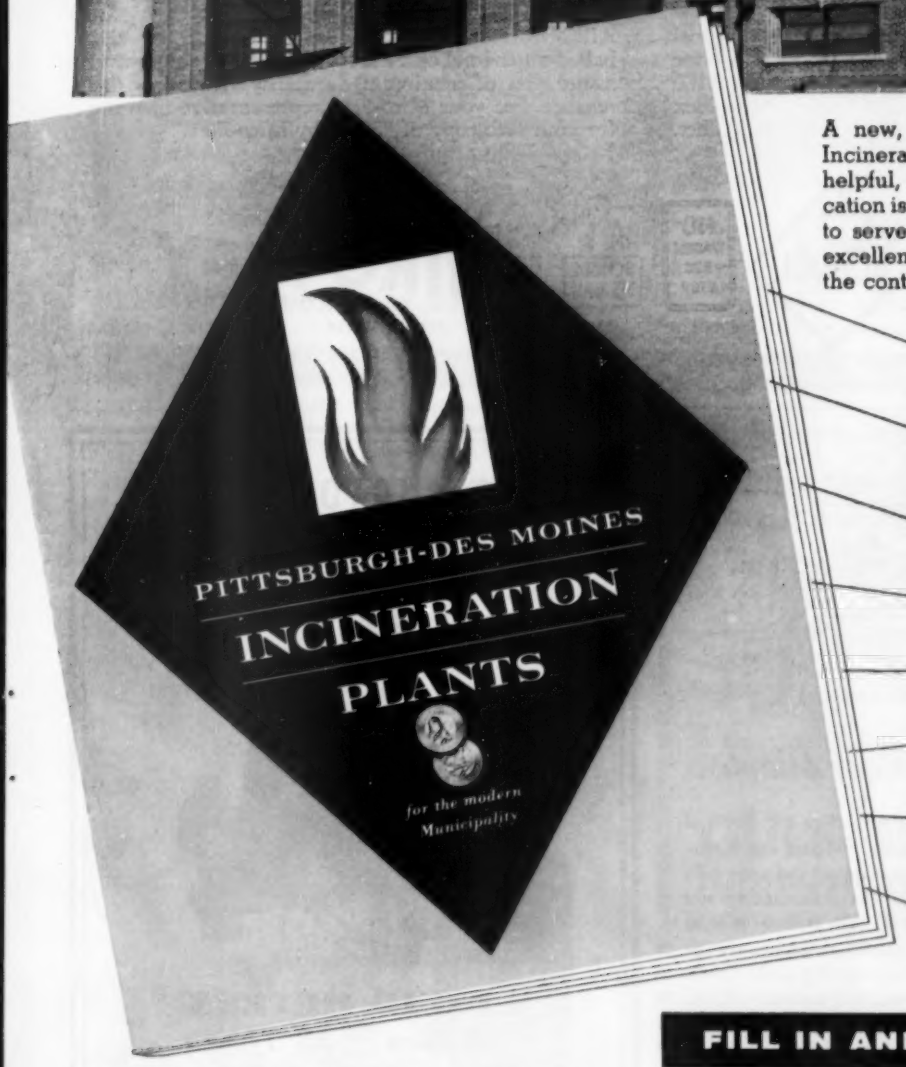

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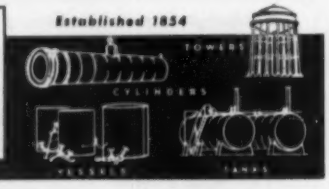

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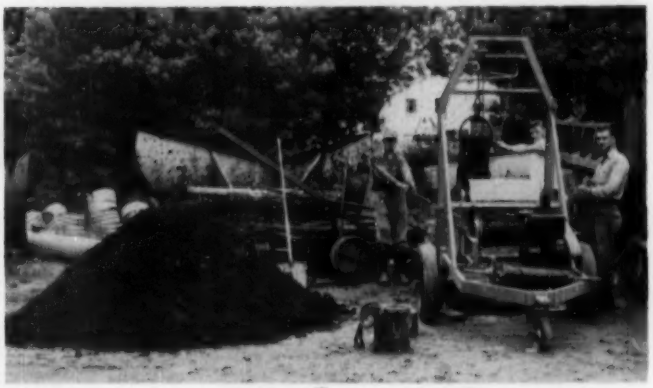

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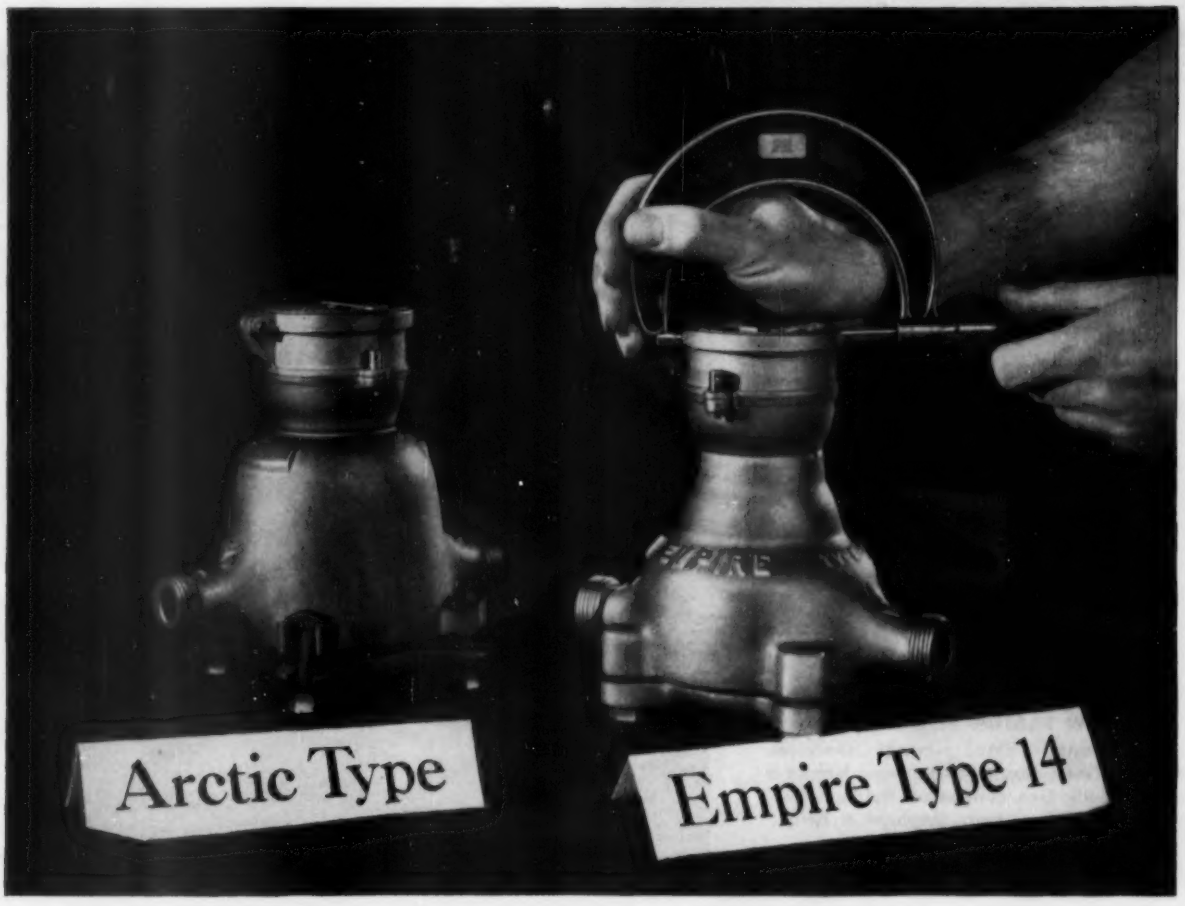

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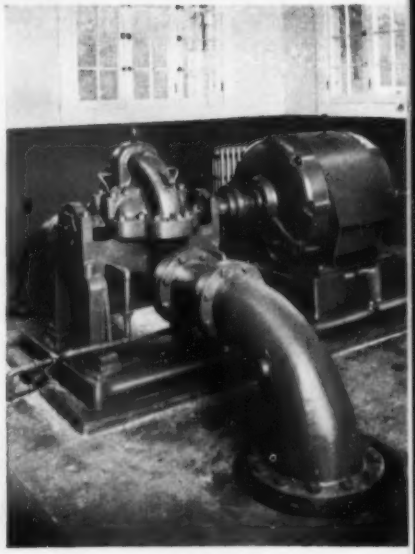
ROCKWELL WATER METERS

NEW BABSON PUMPING STATION
—one of three serving Gloucester, Mass. Consulting engineers: Metcalf & Eddy. Gen. contractor: Ralph P. Hall. Elec. contractor: Shepherd & Betts.

FACT: Reliable electrical link between utility and station is provided by a Westinghouse outdoor power center (4160/480 volts). Power is fed underground to control center in the station.

FACT: Centralized operation of the entire station is assured by this Westinghouse control center. Right cubicle was supplied empty to provide space for pressure gauges and flow meters.



FACT: This Westinghouse 200-hp, 1800-rpm, drip-proof motor drives main pump at a rate of 3400 gallons per minute. Installation also includes 75-hp auxiliary motor and pump.

FACT:

One 200-hp Westinghouse motor pumps 4,500,000 gallons a day

Operating simplicity is a keynote of Babson Pumping Station, erected recently at Gloucester, Massachusetts

FACT: This pumping station has been engineered so that a single pump, driven by a 200-hp Westinghouse Life-Line® motor, handles the entire station water supply—rated at 4,500,000 gallons a day.

FACT: Operating simplicity is further carried out with a Westinghouse control center. In a single enclosure, it groups controls for the main pump and stand-by motor, main controls for lighting circuits, and primary circuit controls that are interlocked with a Westinghouse outdoor power center.

For details on this case history and the Westinghouse team that helped coordinate it electrically . . .

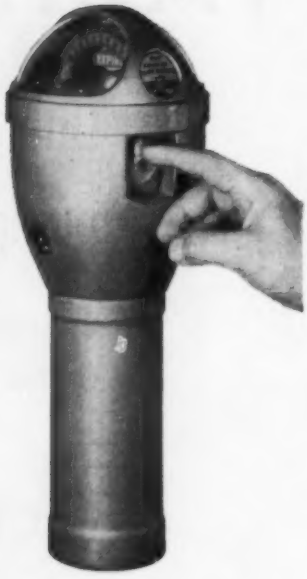
J-94027

Call *The Man With The Facts,* the construction sales engineer in your nearest Westinghouse office

YOU CAN BE **SURE**...IF IT'S

Westinghouse

THE BIG 3



1 DUNCAN-MILLER

2 DUNCAN-Automaton

3 The DUNCAN-MILLER "60"

by

THE WORLD'S LEADER IN PARKING METERS

1 For over 17 successful years, the DUNCAN-MILLER manual parking meter has been predominantly first in public acceptance and dependability.

2 Fully automatic to both the municipality and motorist, the DUNCAN-AUTOMATON possesses modern advantages superior to any automatic parking meter on the market.

3 Modern ideas in functional design have been combined with exclusive features previously introduced in universally acclaimed Duncan built products to make the DUNCAN-MILLER "60" the finest parking meter ever produced.

Our traffic specialists will be glad to counsel with you.

+ Plus +

an easier system for collecting overtime parking fines.

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DUNCAN PARKING METER CORP.

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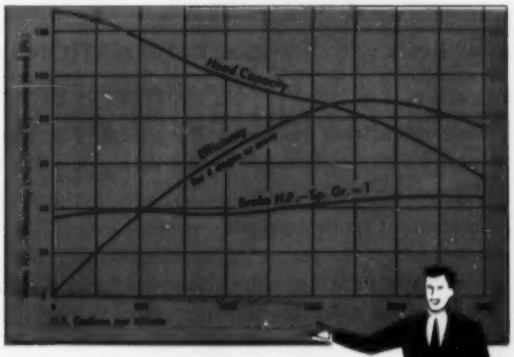
Manufacturers of fully automatic and manual parking meters.

Through Research... A Better Pump!

Research facilities, unparalleled in the industry, are operated by A. O. Smith. These facilities are supplemented by special assignments in laboratories of great universities. This research goes beyond laboratories and enters our customers' offices and operating plants. In fact, you may be one of the many engineers or operators who told us of your requirements which resulted in this new type of pump which excels previous standards of performance and useful life. This combination of research plus experience has produced pumps with higher efficiency, lower operating cost, longer life. Each is "Job Engineered" to suit your specific requirements.

Through researeh ... *a better way*



CHARACTERISTIC CURVES

These curves show just how successfully SMITHway "Job Engineered" Pumps meet your needs. Graph covers an actual test on a 14" SMITHway DKH Pump, 1760 rpm., with glass-lined bowls and bronze impellers; capacity 1875 gpm.; head per stage; 79 feet; efficiency (4 stages): 87%.

A.O.Smith
CORPORATION

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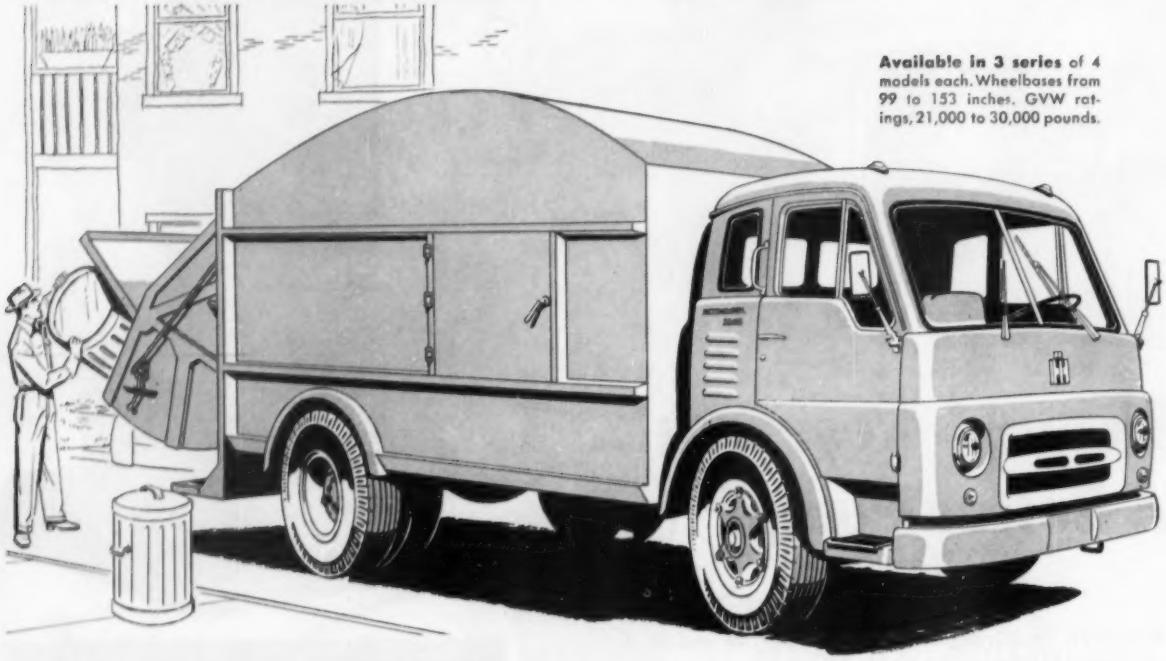
INTERNATIONAL Announces

12 NEW CAB-OVER-ENGINE MODELS



Available in 3 series of 4 models each. Wheelbases from 99 to 153 inches. GVW ratings, 21,000 to 30,000 pounds.

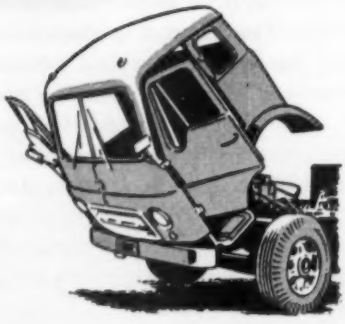
Built with famous INTERNATIONAL all-truck quality to provide greater payload profits

INTERNATIONAL, the heavy-duty leader, brings truck operators new features for payload profit—in an entirely new line of heavy-duty COE trucks.

These all-new INTERNATIONALS make the most of every COE advantage. In straight truck operation shorter over-all lengths for given body sizes mean easier maneuvering in narrow alleys and around sharp corners . . . and easier parking, with less space needed at curb, dock or garage. Better load distribution provides more payload capacity on front and rear axles for more profit.

What's more, these new INTERNATIONALS give you maximum service accessibility, driver comfort, better visibility, and greater safety. With famous Red Diamond truck engine power and proved INTERNATIONAL stamina, economy and long life, these new COE models will lower your maintenance and operating costs and boost your payload profit.

Get complete details and an "on-the-job" demonstration from your INTERNATIONAL Dealer or Branch.



Greater Maintenance Economy! Newest COE counterbalanced cab swings forward to give complete access to engine, transmission, clutch and other units for reduced servicing time and costs. One man can swing cab forward easily with one hand.

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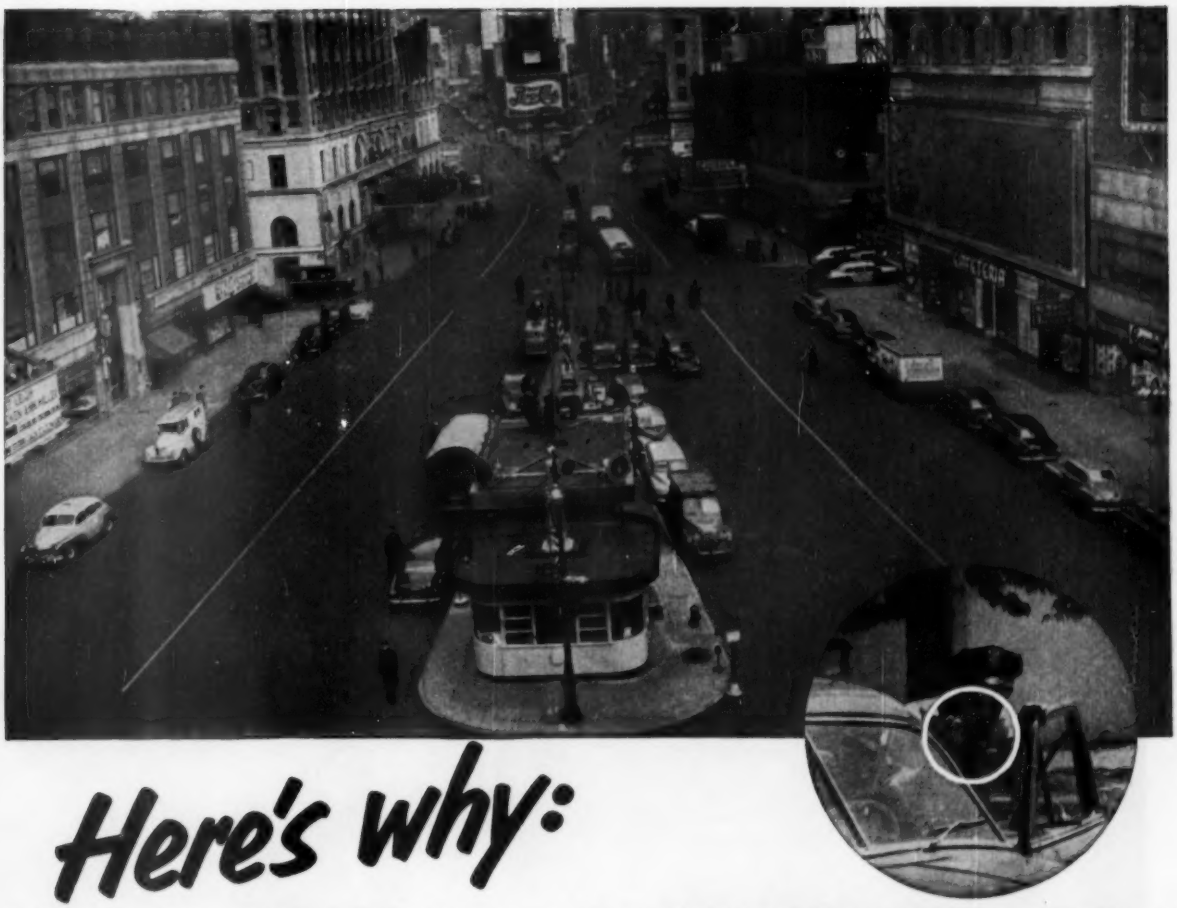
International Harvester Builds **McCORMICK®** Farm Equipment and **FARMALL®** Tractors...Motor Trucks...Industrial Power...Refrigerators and Freezers

See the season's new TV hit, "The Halls of Ivy," with Ronald Colman and Benita Hume, Tuesdays, CBS-TV, 8:30 p.m., EST

INTERNATIONAL TRUCKS

"Standard of the Highway"



Here's why:

NEW YORK CITY RELIES ON A G-E COMMUNICATIONS SYSTEM!

". . . entering the third year of operation now . . . this equipment performs as well as when new."

"Every one of our 25 G-E 250-watt base station and 160 mobiles have delivered all the service we ever hoped to obtain."

". . . have never had a maintenance problem. One installation located 130 miles from the city needs only a routine monthly check."

"For obvious reasons we are continuing to purchase G-E equipment in our expansion program."

Deputy Director of Communications, New York City

IN OPEN BIDDING for communications equipment to guard New York City's critical up-state watershed areas and to add backbone to their municipal defense efforts G-E won on all counts. G. E.'s promise of dependable performance in any emergency *and* its reputation for maintenance economy were outstanding. Today, those promises are facts thoroughly respected and appreciated by New York's officials.

Take note of these facts and the growing preference for G-E! Examine the communication element of *your* defense preparations. The CAS* man in a local General Electric office will help you evaluate its strength. Call him today, or mail the attached coupon!

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**Communications Advisory Service*

GENERAL ELECTRIC

General Electric Co., Communications Equipment Section X1025, Electronics Park, Syracuse, N. Y.

Please have a G-E CAS* man call with complete information on General Electric 2-way radio equipment for civil defense.

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CITY ..... STATE .....

THEY BOUGHT ON FAITH

Photo: Ewing Galloway

Montreal, world's second largest French city, is a great industrial and commercial center. This is a view of the business section, with Victoria Bridge in background.

Certificate of Membership

CIPCC

BY THESE PRESENTS BE IT KNOWN THAT

Ville de Montréal
Service Des Travaux Publics
Division des Eaux et de l'Assainissement

City of Montreal
Public Works Department
Waterworks and Sewerage Division

BY VIRTUE OF HAVING CAST IRON UNDERGROUND PRESSURE MAINS IN SERVICE FOR A CENTURY OR MORE, HAS BEEN ELECTED TO HONORARY MEMBERSHIP IN THE

CAST IRON PIPE CENTURY CLUB

Montreal's Century Club certificate is unusual because it is bi-lingual.

MODERNIZED **cast iron**

139 YEARS AGO–THEY BUY ON PROOF TODAY

MONTREAL installed cast iron water mains 139 years ago . . . and still installs them.

The oldest existing cast iron water main on the North American continent is in Montreal, Canada's largest city. It was laid 139 years ago by the Company of Proprietors of the Montreal Water Works.* Several thousand feet of 2½" and 10" cast iron pipe laid in 1816 are rendering satisfactory service as part of Montreal's 1073 miles of mains, of which approximately 96% are cast iron.

*Now, Public Works Dept., WaterWorks & Sewerage Div.

Montreal's Public Works Department, and utilities in 60 other cities, bought and installed cast iron pipe for underground mains that have been in continuous service for more than a century. They bought on faith founded in good judgment. Today, they continue to buy cast iron pipe because they have *proof* – proof of the long life, dependability and tax-saving economy of this time-defying pipe.

Cast iron pipe has been a rugged, long-lived product from the earliest days. Today's *modernized* cast iron pipe, centrifugally cast, is even stronger, tougher and more uniform in quality. And, where needed and specified, it is centrifugally lined with cement mortar to assure sustained carrying capacity throughout the long life of the pipe.

Cast Iron Pipe Research Association,
Thos. F. Wolfe, Managing Director,
122 So. Michigan Ave., Chicago 3.

CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

This cast iron water main laid in Montreal in 1816 is still functioning after 139 years of continuous service.

pipe FOR MODERN WATER WORKS OPERATION

Dodge Street in Omaha. Built in 1948, the pavement is 60 ft. wide.

THE tremendous yardage of concrete paving listed at the right is an investment that will benefit Nebraska taxpayers for years to come. Estimated cost to property owners averages only $10 per year for a 50-ft. lot, based on a pavement life of 30 years.

The cost could well be far less because concrete pavement can be built to last 50 years or more.

In like manner you can save money for taxpayers in your city by paving streets with ***low-annual-cost*** concrete. Concrete's low cost per year is the result of its moderate first cost combined with lower maintenance cost and longer life than other pavements.

Concrete streets are safer, too—wet or dry, night or day. They are easier to keep clean and cost less to illuminate. They improve the appearance of any neighborhood and enhance its property values.

Write today for a free copy of "*Design of Concrete Pavement for City Streets.*" Distribution of this 22-page booklet is limited to the U. S. and Canada.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Dept. A2-4, 33 West Grand Avenue, Chicago 10, Illinois

Modern concrete street in a residential neighborhood of Scottsbluff.

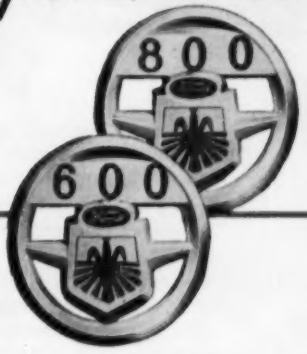
THESE 103 NEBRASKA CITIES PAVED MORE THAN 6 MILLION SQ. YD. OF CONCRETE STREETS FROM 1949 TO 1953

CITY	SQ. YD.
Alliance	208,236
Alma	73,505
Ansley	10,370
Arnold	32,708
Ashland	29,936
Auburn	32,493
Aurora	5,082
Bancroft	14,610
Bartley	14,483
Bayard	43,830
Beatrice	46,510
Beemer	3,493
Bellevue	185,541
Benkelman	1,350
Bennington	6,747
Blair	4,594
Bloomfield	16,508
Blue Hill	3,847
Broken Bow	55,204
Bruning	6,145
Campbell	12,296
Central City	22,606
Chadron	49,550
Coleridge	15,700
Columbus	242,071
Cozad	82,886
Creighton	10,000
Crete	5,278
Crofton	12,420
Curtis	39,095
David City	24,409
Elkhorn	4,743
Elm Creek	2,810
Falls City	18,559
Franklin	21,626
Fremont	301,665
Geneva	15,200
Gering	75,765
Gordon	16,625
Gothenburg	20,670
Grand Island	441,931
Grant	12,520
Hartington	35,635
Hastings	78,731
Hemingford	42,175
Hildreth	2,250
Holdrege	44,888
Indianola	8,595
Kearney	105,733
Leigh	10,670
Lexington	74,674
Lincoln	60,178
Loup City	6,975
Louisville	31,802
Lyons	5,510
McCook	118,829
Madison	8,000
Millard	20,020
Minden	1,789
Mitchell	800
Nebraska City	67,911
Neligh	71,480
Newcastle	15,300
Norfolk	31,880
North Bend	14,781
North Platte	306,122
Offutt Field	32,180
Ogallala	63,325
Omaha	1,414,158
O'Neil	12,000
Oshkosh	33,985
Osmond	10,550
Oxford	66,450
Papillion	46,342
Pender	11,020
Peru	1,500
Plainview	6,840
Plattsmouth	64,663
Ralston	18,097
Randolph	46,681
Schuyler	4,450
Scottsbluff	169,306
Scribner	7,303
Seward	94,457
Sidney	72,800
S. Sioux City	202,468
Spalding	16,536
Springfield	1,996
Stanton	3,973
Superior	56,130
Sutherland	34,850
Sutton	1,847
Syracuse	54,264
Tekamah	33,639
Valentine	51,611
Valley	57,290
Wahoo	48,014
Wakefield	4,035
Wayne	30,987
Weeping Water	2,395
West Point	44,095
Wolbach	31,171
York	20,240
TOTAL	6,279,993

GREATEST NEWS IN FORD TRACTOR HISTORY

5 new models

2 power series



PICK THE POWER YOU NEED

NEW **Power**—New Ford "Red Tiger" Engine steps up power 30%.

NEW **Performance**—A new high in hydraulic control . . . outstanding maneuverability.

NEW **Economy**—An exceptional value . . . outstanding operating economy.

NEW **Features**—Including 5-speed transmission and sturdier construction throughout.

Ford steps out again!—this time to bring you more tractor power . . . more tractor models to choose from . . . dozens more advanced tractor features that can help you get more work done at lower cost.

Yes, for the first time in Ford Tractor history, you can pick from five *new* Ford Tractor models in two power series. And in addition, you can have the economy and power of the Fordson Major Diesel.

But regardless of the model or power of Ford Tractor you choose, you'll find a high level of all-around performance—of amazing versatility—that far out-strips other tractors in the same power class.

So step into your nearby Ford Tractor and Equipment Dealer's and look over the newest and latest in advanced tractor design. We know that when you step out again you'll have a new slant on what really modern industrial tractor power ought to be!

Ford TRACTOR

TRACTOR AND IMPLEMENT DIVISION
FORD MOTOR COMPANY
Birmingham, Michigan

. . . and these two meters—the well-known MI-CO Manual, and the original, time-tested MI-CO Twin Automatic—have helped a great many communities unravel tight traffic situations. How? By always delivering unsurpassed performance. Ask any city using them.

MI-COs operate at full productive capacity, with very few interruptions, for ten years and more. They are built to take rough handling, and to withstand the severest weather conditions.

MI-COs are well known for their consistently high earnings and unusually low maintenance over long periods of time. And servicing is comparatively simple. Should a MI-CO need attention, the adjustment is usually made in a few minutes right at the meter location. This advantage keeps nonproductive time at a minimum. You will find that MI-COs earn more because they are seldom out of order.

The purchase of parking meters represents a major investment. That's why it's so essential to check the records carefully before you buy. Insist on complete records . . . performance, earnings, maintenance, life expectancy. And not for a year or two, but over a period of five to ten years and more.

We'll be glad to submit MI-CO records for installations everywhere, and send a list of cities using MI-COs. Write to any of them about their experience with MI-CO Parking Meters.

If you contemplate the purchase of parking meters, whether it be a new installation, adding to your present meters, or replacing obsolete meters, it will pay you to contact MI-CO. They have much to offer for your parking meter dollars.

MI-CO METERS, P. O. Box 668, Covington, Kentucky

Division of The Michaels Art Bronze Co., Inc.

MICHAELS PRODUCTS:

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A World of Facts On

SUPERIOR COAGULATION!

Free Booklet—

We want you to have a copy of this completely revised, up to the minute booklet that contains a world of information that will greatly assist you in problems you may have in **WATER TREATMENT, SEWAGE TREATMENT, INDUSTRIAL WASTE TREATMENT, SLUDGE CONDITIONING,** and other uses of Ferric-Floc.

Drop us a card for your copy of this booklet that contains valuable information for you.

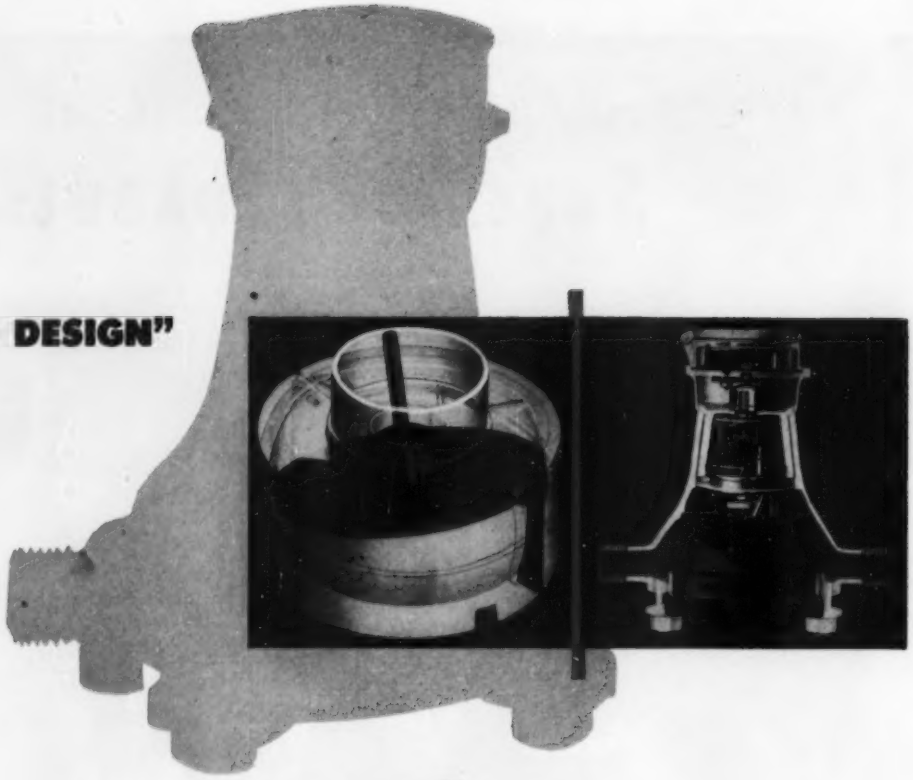
TENNESSEE TC CORPORATION

617-629 Grant Building, Atlanta, Ga.

TRIDENT

"BALANCED DESIGN"

MEANS



QUIET, DEPENDABLE OPERATION

Three problems that give meter superintendents gray hairs . . . noisy meters, broken discs and premature failures . . . have as their primary causes turbulence, interference, and improper motion of the disc piston. Here's how Trident meter's "balanced design" eliminates these faults:

The Trident disc is axially controlled. The thrust roller . . . a Neptune "first" . . . guides the disc in the exact path necessary for smooth, balanced flow of the water. No sloppy or eccentric motion to cause noise, disc breakage or excessive wear. Inlet and outlet ports, and the casing itself are carefully designed for smooth, uninterrupted flow of water. There is no turbulence caused by water circulation up through the gear train and stuffing box . . . these are permanently lubricated and sealed from the path of the water.

We believe the Trident meter, if properly installed, is the quietest, most dependable meter you can buy. It's one of the many reasons why more Trident meters have been bought in the past 50 years than any other meter.

NEPTUNE METER COMPANY
19 West 50th Street • New York 20, N. Y.

NEPTUNE METERS, LTD.
1430 Lakeshore Road • Toronto 14, Ontario

Branch Offices in Principal American and Canadian Cities

259

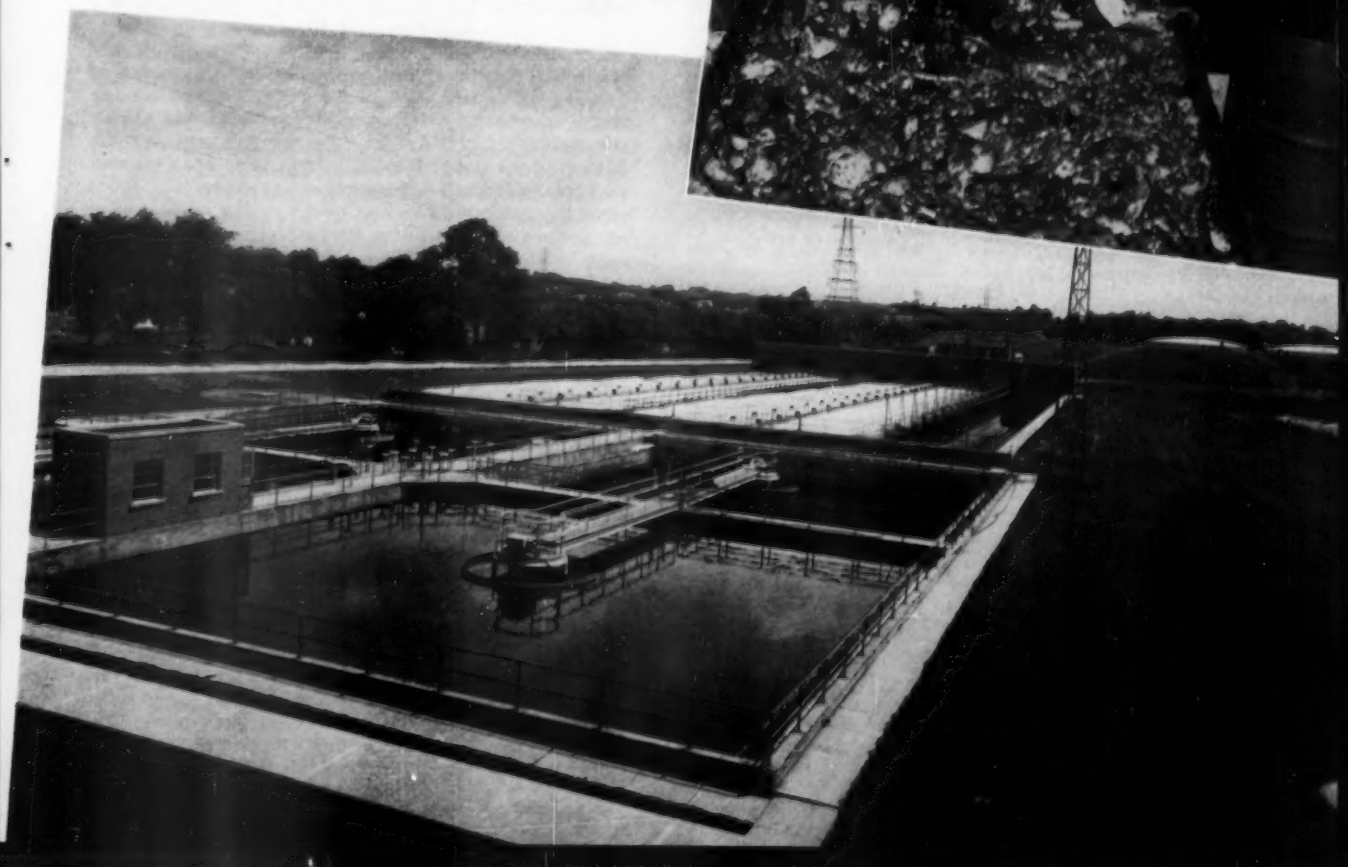
FEBRUARY 1955 The American City

Ground Garbage Boosts Sewage Treatment

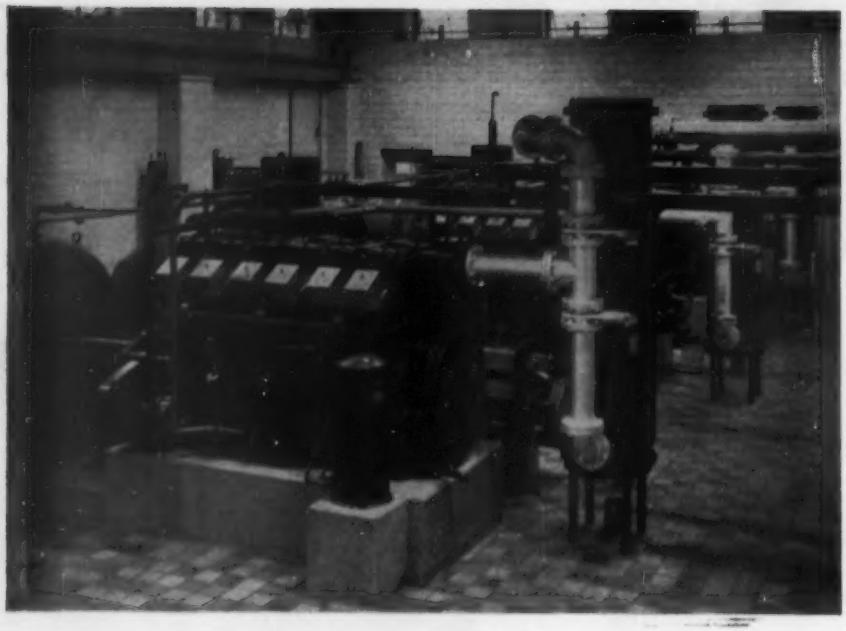
By GERALD F. JOHNSON
Superintendent of Sewage Treatment
Canton, Ohio

GARBAGE, contributed by Canton's housewives, has made our sewage-treatment plant virtually independent of outside power requirements and its operation encouragingly thrifty. Gas production, resulting from the digestion of garbage with the sewage solids, has been more than adequate to supply power for all pumping and air-blowing equipment.

The digesters have produced an average of 375,000 cubic feet of gas per day in two years of operation. This is equivalent to 3½ cubic feet per capita served, or



(Right) Inspectors remove metal and bottles from the garbage before permitting it to enter the grinder at Canton's plant (below), which has become famous throughout Ohio for its high degree of purification.



Gas from the digestion of garbage-sewage solids powers these three 200-hp engines that pump all the raw sewage to the plant.

roughly double the volume we normally would expect without the garbage solids. At times, we have to waste more than 100,000 cubic feet of gas per day in our waste-gas burner.

Canton's plant was designed to incorporate this garbage-grinding feature so that we could save an estimated $11,000 per year. However, not only have our savings been consistently greater, but we have been able to provide efficient and sanitary garbage disposal as an extra dividend. The combination plant was completed and went into operation in November 1952. Its cost, including 1½ miles of 60-inch interceptor sewer line, was $3,500,000.

The plant was designed for an ultimate population of 160,000, or a maximum average flow of 20 mgd. Our present population is 130,000, and the present average flow is 16 mgd. However, since we have to contend with increased flows during and after heavy rains, we must still have many roof drains that illegally contribute to the flow as well as a high infiltration rate to old sewers that lie below the ground-water table.

Gas Powers Pumps

The sewage reaches the plant through the new 60-inch interceptor, passing through a battery of three Chicago Pump Company Comminutor screening and cutting devices before entering the pump well. Three Worthington sewage pumps, rated at 18 mgd each against a 35-foot total head, lift the sewage so that it flows through the balance of the plant by gravity.

These pumps are the first to put the digester gas to work. Each is powered by a 200-hp, V-12 Climax gas engine. All engines are fitted with jacket-water and exhaust-gas heat exchangers, transmitting their available waste heat to a closed, hot-water circulating system. This system maintains the temperature in the primary digesters as well as supplies heat during cold weather for the building that houses the pumps and blowers.

The sewage then flows through 800 feet of 48-inch force main to two Dorr Detritors that operate in tandem to remove the inorganic grit. These basins are 20 feet square and have a 2-foot water depth, retaining the sewage for 0.43 of a minute at design flow.

The sewage then passes through three primary settling tanks that provide an average detention period of 1.15 hours at design flow. Each tank is 32 feet wide, 124 feet long, and has a 10.6-foot water depth. The settling basins are provided with Jeffrey straight-line collectors that withdraw the sludge and scum, for transfer to the digesters.

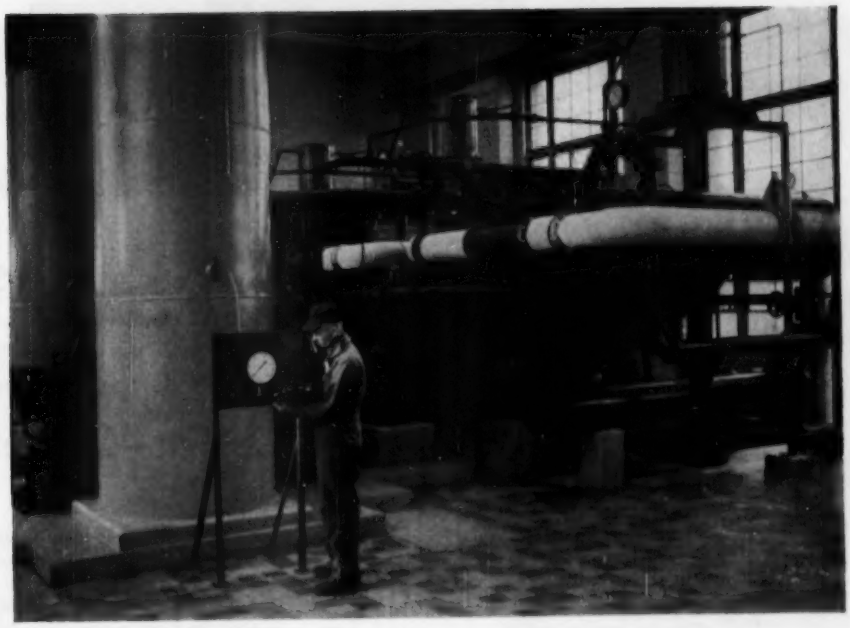
Gas-Powered Blowers

From the primary clarifiers, the sewage passes to a battery of five aeration basins of the straight-through type. These are 300 feet long, 30 feet wide, and have a side-wall depth of 15½ feet. The aerators provide a detention of 6.3 hours at design flow. They are equipped with Swing Diffusers and Saran-wrapped precision tubes made by the Chicago Pump Company. The units receive air from three 7,000-cfm Roots-Connersville blowers, each powered by a 390-hp, five-cylinder Worthington gas engine, also using digester gas for fuel.

We have had some clogging of the diffuser tubes in the aeration basins which was probably caused by deposition of mineral salts from Canton's very hard water. However, by running all tubes through a muriatic acid bath, we restore them to nearly the same head loss of a new tube.

The effluent from the aeration tanks passes to four Dorr Squarex final clarifiers. These 75-foot-square units provide a detention period of 2.3 hours and discharge a final effluent having about 10 ppm of BOD and between 15 and 20 ppm of suspended solids. The overall reduction, from the raw sewage to the outfall, is 90% to 95% in both BOD and suspended solids.

The digester gas also supplies power required to return a portion of the sludge from the final clarifiers to the aeration basins. As is well known, this return of the sludge is required in the activated sludge process. We use three 12-inch volute pumps, rated at 4 mgd each, and powered by a Buda four-cylinder gas engine. The



The gas also provides fuel for the engines that drive the compressors, thereby lowering activated sludge treatment cost.

pumps deliver the balance of the sludge to the primary settling basin.

The solids, which have settled in the primary clarifiers, and this includes waste activated sludge and solids in the supernatant liquid returned from the secondary digesters, are pumped to the primary digesters. We have 10 digesters in all, six with fixed covers that serve as primary tanks and have heating coils. The remaining four serve as secondary digesters and are of the floating gas-holder type. Each digester is 90 feet in diameter and has a 20-foot side-wall depth, providing 8.3 cubic feet of volume per capita. All use Dorr digestion equipment.

We use the digested sludge for fertilizer, discharging it to a farm that lies approximately 5 miles south of the new plant. It travels through a 10-inch, cast-iron pipe to the old sewage-treatment plant where one of the Imhoff tanks is used as a storage tank. From the Imhoff tank, the sludge is again pumped by a two-stage, 400-foot head Chicago Pump Company centrifugal pump to high points on the farm. Here valved outlets discharge the sludge into main and lateral ditches for disposal over approximately 600 acres of hilly farm and pasture land.

Grinding Plant

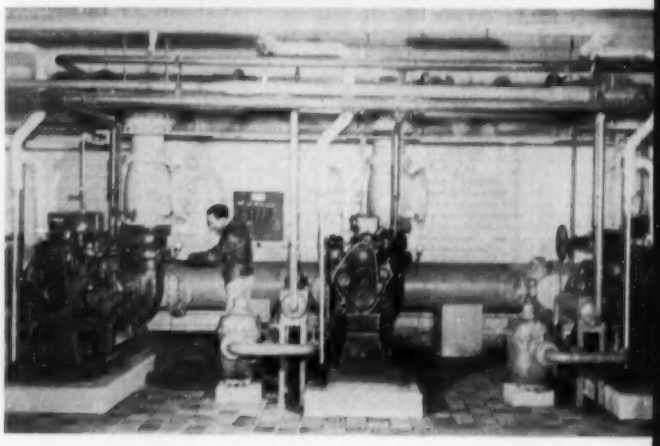
The garbage-grinding plant is located at the sewage-treatment-plant site, and is housed in a separate building. We have two Jeffrey hammermill grinding units, each capable of handling 10 tons of garbage per hour. The plant receives an average of 35 tons of garbage every day except Sunday. Trucks dump the garbage into a receiving hopper where it is transported by apron and elevator conveyors to the grinder. En route, the garbage is inspected for removal of table silverware, tin cans, bottles, corn husks, chicken feathers, metal, and large bones.

Water is introduced at the grinder as it macerates the garbage into a thick, soupy consistency. This slurry is then discharged to a grit washer which removes the bone slivers, egg shells, bottle caps, and similar material, allowing the lighter, organic matter to flow over a weir into a garbage well. The plant is so designed that the ground and washed garbage slurry can be discharged either into the sewage-treatment plant at the Detritors or pumped directly into the primary digesters. We have chosen the latter method, relieving the plant of additional loading.

The treatment of sewage and garbage together in Canton has provided an interesting and thrifty sanitation team that has helped keep costs down, particularly in the face of added cost that activated sludge generally entails. It has given us a plant that not only has an economical source of fuel, but one independent of outside power failures as well.

This is the fourth plant that has served Canton; however, all previous plants were troubled by foul odors, flies, and generally unsatisfactory conditions. This one takes the dual problem of sewage and garbage disposal and eliminates both in a thrifty, nuisance-free manner.

For a final assignment, the gas powers the pumps that transfer return sludge to aeration basins and primary clarifiers.



Lewiston, Maine, varies its bituminous practices in an unusual street and sidewalk program

Sometimes Tar—Sometimes Asphalt

(Above right) Bituminous-mix sidewalks have a good record of service in Lewiston. (Above) Each year the city places bituminous surfacing on its granite-block streets in the downtown area.

The finished sidewalks give long, trouble-free service.

THE Etnyre bituminous distributor at Lewiston, Maine, has to keep busy to keep the city's 200 miles of roads and streets in good, all-weather condition. Under the program developed by Public Works Director George Maher and City Engineer Henry Aliberti, most streets in town get some sort of treatment, generally a seal coat; some are rebuilt each year.

Tar, rather than asphalt, has received the preferential nod in Lewiston for this work, since the crews have found it somewhat easier to use in inclement weather. However, cutback asphalts and emulsions are used on permanent-type macadam streets. When treating a new gravel street, the procedure is to apply a No. 5 tar at the rate of ½ gallon per square yard, allow it to soak for at least a half-hour, and then cover it with a light application of sand.

Two weeks later, the distributor will again go out and seal this surface with a No. 7 tar, placed at the rate of ¼ gallon per square yard, and then covered with rock chips or coarse sand, at the rate of 25 pounds per square yard. Century and Flink tailgate spreaders, attached to dump trucks, will spread the aggregate.

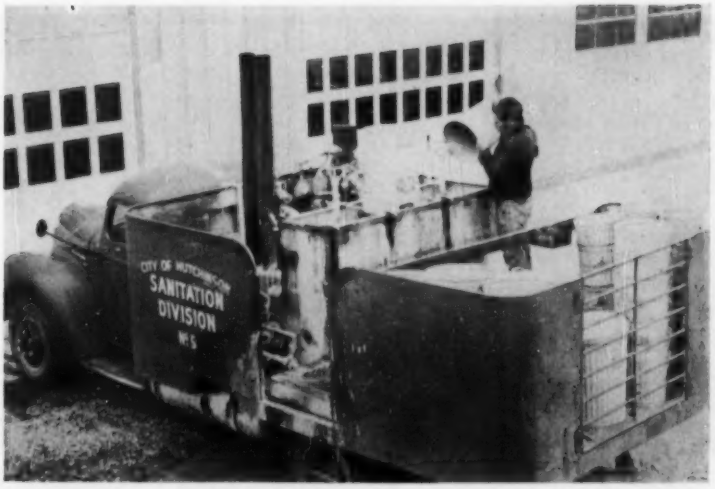
The city has a number of granite-block streets that are very strong. However, they are slippery and noisy. Each year, some of these streets are surfaced with a standard hot-mix asphalt application.

Sidewalks also are chiefly constructed of asphalt, even in the downtown area. The expansive, clayish soil in the Lewiston area causes a good deal of trouble for the standard concrete construction. This type of sidewalk, properly mixed and applied, overcomes this problem and, at the same time, gives the pedestrian an easy, relatively soft surface for walking.

The city has enjoyed much success with the use of a bituminous mix, with crushed-stone aggregate, for these sidewalks. This mix contains Kotal, an additive that permits use of the mix successfully in rainy or freezing weather. It is processed in a conventional hot-mix plant and laid cold, then compacted with the city's C. H. & E. roller. A 2½-inch layer will compact to 2 to 2¼ inches during its laying. The Kotal additive permits the mix to be stockpiled for over a year and still remain in as good shape as freshly laid material.

If the city's sidewalk program amounts to no more than about $20,000 per year, city forces will do the work. If it becomes greater than this, as it did last year —then the city feels justified in preparing plans and specifications so that it can award contracts for the work.

City-Owned City-Cleaned Garbage Cans



Hutchinson includes cleaning of garbage cans in its refuse-collection program.

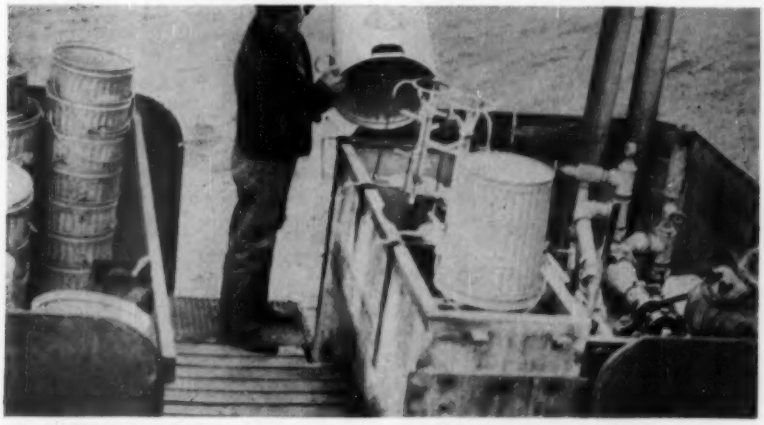
By CECIL BYBEE
Superintendent
Refuse Collection and Disposal
Hutchinson, Kans.

SOME health authorities have labeled the householder's refuse container as the weak link in the municipal fly-control program, but they weren't talking about the way we handle refuse in Hutchinson. We are a central Kansas city of 35,000 people. The distinguishing feature of our program that reduces the fly population is our policy of cleaning all refuse containers once every 10 days. Also, an ordinance requires that all garbage be paper-wrapped. We insist upon, and get 100% compliance.

Cooperation in wrapping of garbage and our regular washing of the cans keeps offensive odors to a minimum and stymies fly-breeding even in hot summer weather. Another equally important feature of our program is the city ownership of uniform containers.

A final feature important to the success of the operation is our financing program. We operate on a service-charge basis, and are always in the "black." We make a charge of $1 per month per single-family household; $1.50 per month per duplex, if it uses a single container not larger than 20 gallons; 50 cents per month per family living in apartment buildings, with a $2 minimum; and $6.50 and up per month for commercial service. Service charges are collected three months in advance.

Since 1950, we have been using our washing machine to handle 500 to 700 containers per day. The machine is mounted on a truck and follows the collection crew. We have 10 collection routes, and the washer takes on a different route each day until all routes have been covered.



With this portable machine, one man can wash up to 700 containers per day.

The only other municipal program like ours is at Lansing, Mich., where the city collects the containers and takes them to the disposal point for emptying and cleaning. We understand that they leave a clean container at each household. This system would not be suitable in Hutchinson because it would force us to collect an inefficient load. Individual containers are not always full.

Another reason that we prefer our program is that we like the efficiency of the compactor-type bodies and have a fleet of Leach Packmasters to make the collections. Since the central cleaning system was impractical, we adopted the portable system. Five years of use has proved us right.

The washing machine has three basic structural and operational units:

1. A 350-gallon water tank with two built-in 100,000-BTU immersion burners which keep the water at a temperature of 180° F.
2. A motor and pump to pump the hot water at approximately 100 psi.
3. A jig arrangement over which the garbage cans are inverted, and an arrangement of 12 nozzles that clean the cans as they are rotated by the jig.

The washer uses about 50 gallons of propane a day for power and heat. At 8 cents per gallon, our fuel cost is about $4 per day. We also require 7 pounds of detergent at 18 cents per pound, or, roughly $1.25 per day. In addition, we assign three men to do the work at a cost of $40 per day.

Thus, the daily operating cost is about $45 for washing 500 to 700 garbage cans. We believe ours is a sanitation service that any city can afford and probably should if it is going to keep its refuse containers from being the weak link in the city's fly- and insect-control program.

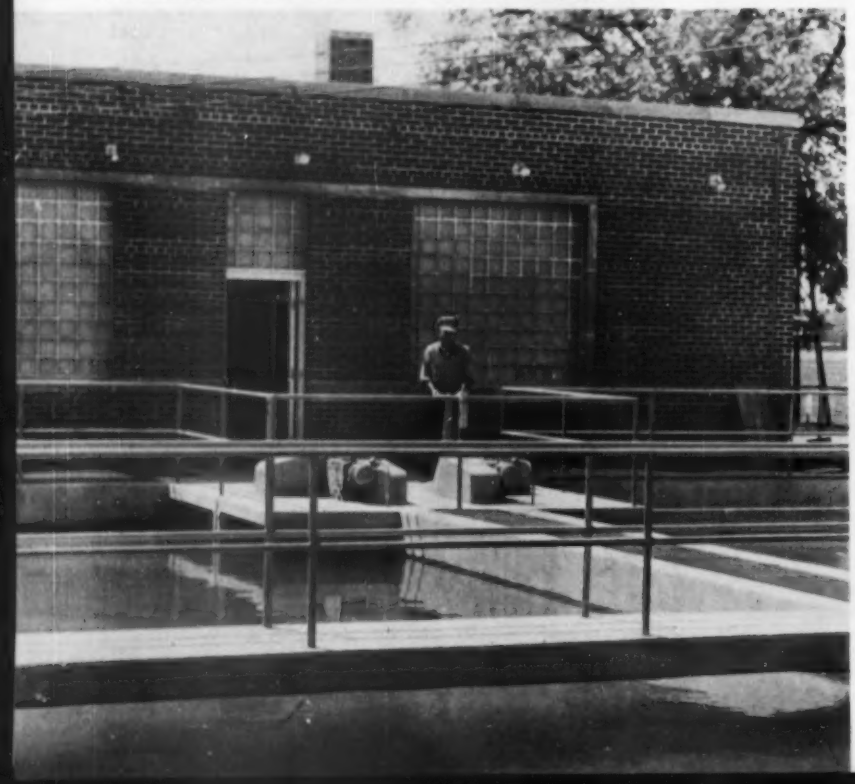
By F. H. CONNORS
City Engineer
Van Wert, Ohio

A Floodwater Reservoir

. . . provides year-round supply for Van Wert, Ohio

The new reservoir fell to a depth of 9 feet during the 1953 drought, but provided sufficient water for all normal uses.

The settling basin has mechanical sludge-removal equipment.



SPRING floodwater, pumped to a nearby man-made reservoir, is offering the first really satisfactory solution to water-works problems that the 10,000 people in Van Wert, Ohio, have suffered since the city's founding. The city had relied upon seven wells, all delivering water so hard that Monday morning wash-day duties were an ordeal for every housewife in town. This water had more than 900 ppm (parts per million) of hardness that curdled soap, coated water pipes, and clogged household plumbing.

While the people did not like this situation, they took no steps to correct it until the water table in the wells started to drop and industries began to pass up Van Wert because of its bad water. At that point, everyone knew that the time for action had come.

The first step was to make a study. The City Council retained Finkbeiner, Pettis & Strout, a Toledo engineering firm, to recommend the best sources of water. There were three possibilities: to build a pipeline to the Maumee River, nearly 30 miles away; to use water in an abandoned quarry, about 8 miles away; to skim off the spring floodwater of a local creek and pump it to a reservoir on high ground, so that an adequate sup-

ply would be available throughout the year.

The third method appeared to be most promising, and, in 1949, the city went earnestly to work, voting the needed bonds and awarding bids for construction.

Reservoir Construction

The reservoir holds 380,000,000 gallons and covers 62 acres of ground. City forces tested the site carefully to make certain that it was free from sand and gravel strata that would permit the stored water to drain away. The reservoir was constructed simply by throwing up dikes in a rectangular shape, borrowing earth from the center area.

A pumping station, equipped with four vertical, turbine Worthington pumps, draws the floodwater from the stream and delivers it to the reservoir. Two of these have capacities of 5,000 gpm; one, 3,000 gpm; and one 1,000 gpm. The pumps are controlled at the filter plant, a little more than a ½ mile away.

The water then flows by gravity to the plant. This plant has a rated capacity of 1.5 mgd and treats the water with lime, alum, and chlorine, and with occasional doses of soda ash and activated carbon. Omega loss-in-weight feeders apply the chemicals to the water before it reaches the settling basin.

The plant has two settling basins, each 20 feet wide and 70 feet long, with an effective depth of 12 feet. Chain Belt equipment removes the settled sludge so that two 60-gpm Economy pumps can transport it to a nearby lagoon.

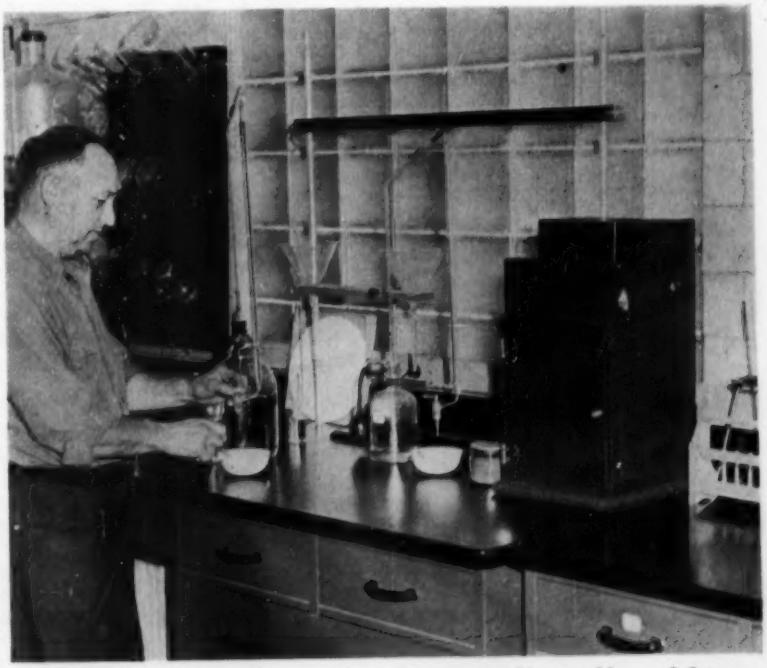
Filtration

The settled water then proceeds to a pair of filters, each 16½ feet square, and designed to provide filtration at the rate of 2 gallons per square foot per minute. The filters use Builders-Providence control equipment. To backwash the filters, the plant is provided with two 4,000-gpm Economy pumps. The backwash lines are equipped with M & H valves and a Sparling wash-water meter.

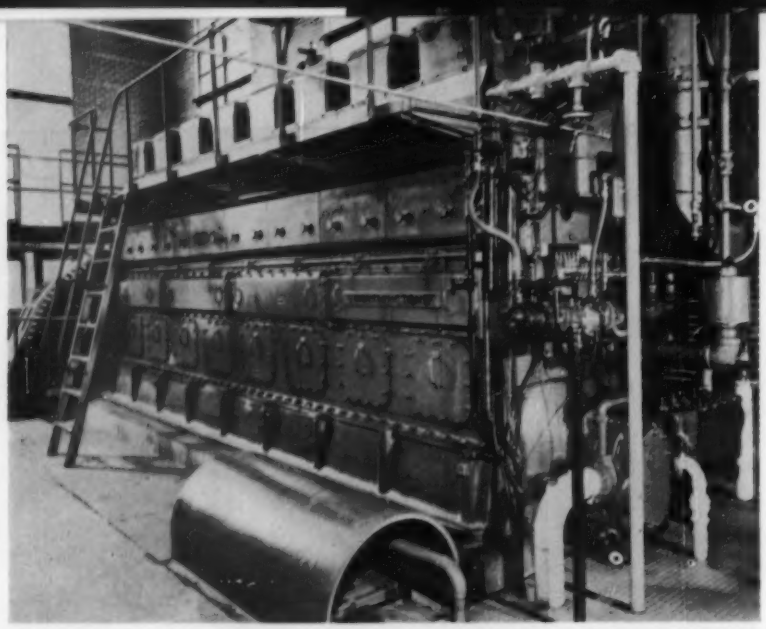
The filtered water passes to an underground storage reservoir of 500,000 gallons capacity. Three Economy finished-water pumps deliver the water to the distribution system. One 1,050-gpm pump is equipped with a Reo-Continental gasoline engine, in addition to an electric motor for standby service. The other two pumps are electrically powered and have capacities of 700 gpm and 525 gpm respectively. A Wallace & Tiernan chlorinator, with a capacity of 200 pounds per day, provides the final purification of the water as it leaves the plant.

Omega loss-in-weight chemical feeders are used in the treatment plant.

The plant and reservoir went into operation early in 1951. Since then, the reservoir has had an opportunity to prove itself, especially during the 1953 drought that struck many Midwest cities sufficiently hard to dry up their sources of water supply. However, Van Wert weathered this difficult period without any rationing whatsoever.



The plant's well-equipped laboratory uses Kewaunee cabinets, tables, and fixtures.



One of the dual-fuel engines which tells only half the story of less costly power generation in Clyde. The other big engine stands at the left (out of the picture).

Diesel

Clyde, Ohio, matches steam against diesel power in its municipal electric plant under strict, competitive conditions

By HARVEY A. EINHART
Manager of Utilities
Clyde, Ohio

THE choice between steam or diesel power in municipally operated power plants always is a difficult decision. It confronts a city in a number of ways. Some have to develop power for pumping water; some for pumping sewage; and a number, like ourselves, for the generation of electric power for public consumption. This last task is a great responsibility. Everyone is aware of how much use the public makes of its electric supply. The power line today is as important as the water mains in the modern city.

In our village, diesel power has proved to be the economic winner by a substantial margin. We concluded that this was the case by conducting an engineering analyses before beginning present construction. We now have proved it by matching the cost of steam operation against the cost of diesel. We expect to make the savings more pronounced in the future because the engines we have installed are the dual-fuel type, and we expect to have the benefits of natural gas soon.

Actually, we have turned back the pages of our calendar 10 years. Today, the new dual-fuel engines produce power for us at a cost no greater than it was in 1945, despite the fact that operating costs have risen substantially. With natural gas, we will move back to 1940 costs.

Clyde (population 4,500) is a typical Midwestern city operating under Ohio's "village" classification. Its history dates back to the close of the War of 1812. Since then it has experienced residential and industrial growth. The largest among its industries is a nationally recognized manufacturer of washing machines.

Clyde tolerates no engine noise from the electric plant. Maxim exhaust silencers suppress exhaust pulsation for an area of 50 feet around the utility's building.

Rapid Growth

Like many other cities, it has experienced its share of postwar growth. During the last 10 years, it has increased almost three times as fast as it did during the preceding three decades. While this encourages civic pride, it, at the same time, produces municipal problems. We have had to enlarge our water works, build new schools, and increase our sewage-treatment facilities, as well as provide more electric power.

Municipal electric power has a long history in Clyde, starting in 1893 when the city put two 150-kw steam engines into operation. Twenty years later, the city enlarged the plant and, in 1924, did so again. During 1937 to 1940, the plant was not only enlarged, but its efficiency was improved by the purchase of two steam turbines, rated at 750 and 1,250 kw respectively.

These units carried the entire load until December 1953. From 1944 to 1954, delivered coal prices rose from

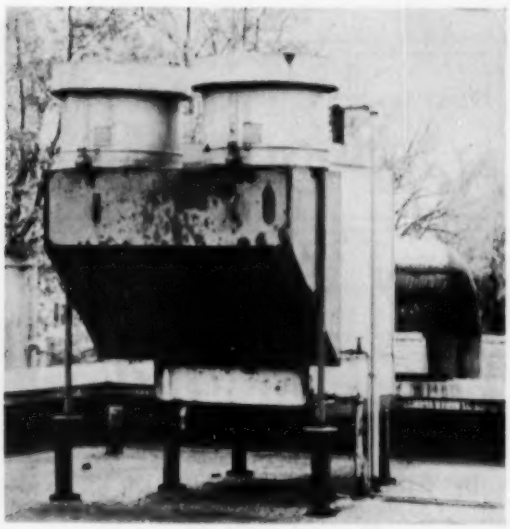
Power Wins

Table I

	STEAM	DIESEL
Average monthly fuel bill	$6,664.25	$4,273.33
Average fuel cost per kwhr	0.0113	0.0788
Auxiliary equipment operating cost	1,107.36	271.35
Gallons of cooling water per kwhr	2.85 gals.	0.645 gals.

Table II

	STEAM	DIESEL
Fuel costs	$6,244	$4,638
Auxiliary equipment power	91,540 kwhrs.	36,100 kwhrs.
Cooling water	1,668,000 gals	308,000 gals.



A pair of Marley Aquatowers, each equipped with two Air Maze oil-bath filters, is used to precool the intake air.

$4.50 to $9.30 per ton. Plant labor costs also doubled. And paralleling the growth of population was the popularity of electrically powered household devices. The net result was a serious power shortage. Power generation climbed steadily from 3,400,000 kwhrs in 1945 to 6,000,000 in 1953.

Under the able leadership of Clyde's Board of Trustees, and with the guidance of its consulting engineer, W. W. Kohli, of Tiffin, the city determined that the answer lay in the use of dual-fuel diesel engines. Consequently, the Board accepted competitive bids in April 1952 for engines, and selected two Worthington 2,010-hp supercharged dual-fuel diesels to carry the plant's base load. The engines are equipped with 1,420-kw Ideal generators and Woodward governors. The steam equipment was retained for standby purposes.

At the end of 1952, when steam equipment carried the entire load, fuel costs averaged 11.3 mills per net kwhr. By the end of 1953, when the diesels began to take over the load, fuel costs dropped to 7.88 mills. Fuel costs at the beginning of 1954, as indicated previously, were the same as they were 10 years ago.

We soon will have the advantage of natural gas. When it becomes available, these costs will drop to an even lower figure. At the rate of 65 cents per 1,000 cubic feet and pilot oil at 9.59 cents per gallon, we can expect fuel costs of only 6.4 mills, or the equal of steam-generating costs of 15 years ago.

For the past five years, the steam equipment has required 2.49 pounds of coal per kwhr generated. The diesel equipment, since it started operation, has averaged 12.77 kwhrs per gallon of fuel oil, with a running load factor of approximately 60%.

For a more direct comparison, let us examine in detail the first eight months of 1953 when the steam equipment was operating, and match this against the first nine months of diesel operation in 1954. The comparison is shown in Table I. The operating figures for March 1953 and April 1954 show the comparison even more definitely because the amount of power generated during both months was identical. The statistics are presented in Table II.

If we had been able to use natural gas costing 65 cents per 1,000 cubic feet and rated at 1,000 BTU per cubic foot, we would have dropped our fuel costs to only $3,757.

Accessible Auxiliaries

Plant operation and design contribute greatly to this record of economy. All station auxiliary equipment is easily accessible for repair and maintenance. We have two Worthington air-starting compressors, one with an electric and the other with a gasoline motor; we have two Honan-Crane lube-oil purifiers; two Worthington Monobloc jacket-water pumps; and two Sims lube-oil coolers.

All this equipment is located in a separate room in the rear of the engine station. We also have three Worthington raw-water pumps placed in the basement. The piping has been designed so that any pump can serve either engine. We use the Chrome A-10 process, of the Wright Chemical Corporation, of Chicago, Ill., to condition the jacket water, and utilize the water to heat the plant during cold weather.

The engines have been designed to produce maximum power output at high ambient temperatures. This type of engine performs better with saturated air than with dry. It lowers the end-compression temperature that suppresses knock-producing compounds and produces additional cooling. We have two Marley Aquatowers on the plant roof to precool the intake air and saturate it.

Personnel Incentive Plan

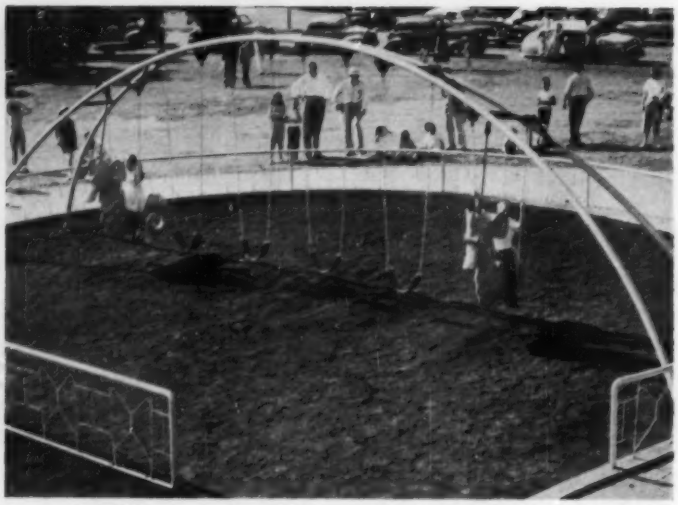
Another factor in the operation of our plant that is important is our incentive system to encourage versatility in operating personnel. The men have been trained to do limited maintenance on the diesels and turbines, and to make complete analysis and titration tests in the filter plant. The city pays all expenses for those who want to attend specialized classes at The Ohio State University. After the men have received appropriate licenses they are given additional pay increases.

We hired no new men when changing from steam to diesel generation. Key men who had obtained their diesel-engine schooling were sent to the factory where the engines were built for further instruction in diesel maintenance. Thus, at all times, we have competent personnel anxious to make the operation more efficient.

Both diesel and steam have worked well in Clyde, but thus far the diesel has worked much better, and natural gas will give our people even greater economies.

New Creative Play Area For Oakland

By WILLIAM PENN MOTT, JR.
Superintendent of Parks
Oakland, Calif.



Swings designed to resemble seahorses are contrasted with conventional ones.

THE Oakland Park Department has completed a new, informal, creative play area for small children in Lakeside Park. Funds for its development were contributed by the Kiwanis Club of Grand Lake. Original in design, bright and cheerful in color, the play area features new principles of design and construction.

An informally shaped play sculpture, designed by our Park Department employees and constructed of plastic laminated glass cloth of lemon yellow and sky blue over a steel armature, provides the children with an opportunity for all types of creative play. Swings designed to look like seahorses and constructed of plastic laminated glass cloth over a steel armature give the youngsters something new to swing on.

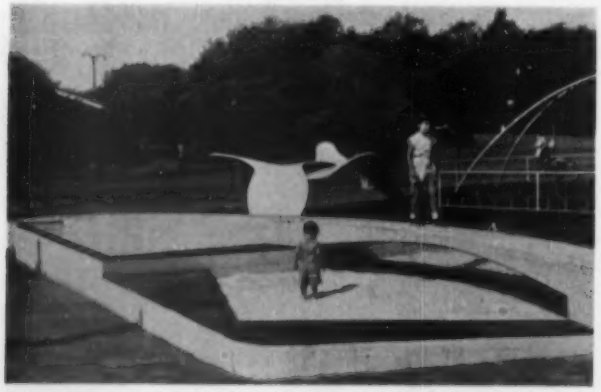
A sand box laid out in a geometric pattern in coral and black, features a ramp walkway terminated at one end by a drinking fountain and at the other by a pylon and plaque, indicating that the area is to be known as the Kiwanis Kiddie Korner. The sand box and ramp provide active children with another opportunity to expresss their imaginations in creative play. A slide in coral and blue, designed for safety and simplicity, is another unit that children enjoy. Benches in pleasant colors and of simple design provide places for resting.

Tanbark has been used as a ground cover in the most actively used play areas surrounding the swings, sculpture, and other play equipment. We have found that it provides a colorful and resilient surface material that protects the children. To top off its advantages, tanbark is available in large quantities at very reasonable prices.

The new play area, which occupies about 10,000 square feet, is located adjacent to the duck feeding area in Lakeside Park. This park is situated in the center of Oakland and contains 122 acres of land surrounding 155 acres of water.

The total cost of the play area, including Park Department labor was $7,000. Cost of the play sculpture amounted to $142 for the steel armature, and $150 for the glass cloth and pigmented resin. The cost of the slide was $625. The swings were $315, plus the cost of the seahorses at $200 each.

The play sculpture and swings were developed from models rather than working drawings. Much of our creative work is done in this manner because it gives us more flexibility when we are working with models than with working drawings. Since a great deal of the work is done in our shops, we prefer this technique.



The sand box is laid out in a geometric pattern in coral and black. Its ramp walkway is terminated at one end by a drinking fountain.

Plastic laminated glass cloth over a steel armature assures sturdy construction of this play sculpture.

Financing Public Services in Toronto's Metropolitan Government

By G. ARTHUR LASCELLES
Commissioner of Finance and Tresurer
The Municipality of
Metropolitan Toronto

THE Toronto Metropolitan Corporation is governed by a Metropolitan Council of 24 members. Twelve members are from the City of Toronto and 12 are from the suburban municipalities. The 12 from the City of Toronto are composed of: The Mayor of the City; the two out of the four controllers who received the highest number of votes at the last municipal election, and the 9 aldermen from the 9 City Wards who received the highest number of votes in their respective wards at the last municipal election. The 12 representatives from the 12 suburbs are composed of the head of each of the 12 suburban municipalities.

Under this system of government the 13 municipalities may preserve their identity and continue to administer those services which are local in nature and at the same time combine together for the provision of those services which are metropolitan in nature and are essential to the whole area.

Water Supply and Sewerage

It may be of interest to mention some of the main features embodied in the Act setting up the Metropolitan Corporation. In connection with water supply the Metropolitan Corporation automatically became the owner on the first of January 1954, of all pumping stations, treatment plants, reservoirs, and trunk mains in the whole of the 13 municipalities. No compensation was payable by the Metropolitan Corporation to the local municipalities who previously owned these works, but the Metropolitan Corporation assumed any outstanding debenture debt issued in connection with the construction of such capital assets. The Metropolitan Corporation will sell water to each of the 13 municipalities through meters at a wholesale rate sufficient to pay the cost of the operation and extension of the metropolitan water system.*

With respect to sewage disposal the Metropolitan Corporation now owns all of the permanent sewage-disposal and -treatment plants and trunk sewers and, as in the case of water supply, no compensation was payable for the assets taken over, but the outstanding debt was assumed by the Metropolitan Corporation.

Arterial Highway System

As to arterial highways the Metropolitan Council designated those highways in the whole area which it would assume as metropolitan roads as of the first of January 1954. The Metropolitan Corporation has assumed liability for all the outstanding debenture debt issued for the construction of such roads and will pay the cost involved in the maintenance and extension of such highways. The Metropolitan Corporation will also undertake the building of such expressways, parkways, and arterial highways as will provide the whole of the area with a modern and adequate arterial highways system. Such highways will be paid for 50% by the Metropolitan Corporation and 50% by the Province of Ontario. In the case of all other municipalities in the Province the provincial subsidy is one-third of such cost.

Public Schools

In order to equalize the cost of education throughout the area, the Metropolitan Corporation assumed all outstanding school debenture debt as at December 31, 1953, and, in addition, will pay each year to the school boards in each of the constituent municipalities, based upon average daily attendance of the previous year, $150 for each primary school pupil, $250 for each secondary school pupil, and $300 for each vocational school pupil. This will permit each of the local municipalities to provide a reasonable standard of education for their children. If any local municipality desires to provide a higher standard of education than these payments will permit, they may do so at extra cost to their taxpayers in their respective local municipalities.

The Metropolitan Council is paralleled with a metropolitan school board which designates the location

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* During the past 10 years an insufficient supply of water during the summer months was experienced by the suburban municipalities. While the City of Toronto had an ample supply for its citizens it also sold water to some of the adjacent municipalities but this source of supply was not sufficient to meet the ever-increasing demands in certain areas. The city charged a net rate of 16 cents per thousand gallons for water sold to outside municipalities. By the time this water reached the consumers, distribution and administration costs in the local municipalities were added with the result that the cost of water in such municipalities was considerably greater than in the City of Toronto. In addition to this supply, certain municipalities developed artesian wells which augmented their supply to a limited and uncertain extent and at greater cost.

The need for water was so great that the municipalities experiencing a shortage were forced to disregard costs in order to get, at least, a minimum supply. As a consequence, there was a wide variance in the cost of water to consumers in the various Area Municipalities. As a result of the formation of the Metropolitan Government, which has the sole authority for the production of water for the area, a uniform rate for water throughout the 13 Area Municipalities is under consideration. This would mean, of course, that the City of Toronto and one other of the constituent municipalities, both of which had their own complete water systems and operated on a low cost basis to their local consumers, would have to pay somewhat more for water, while the consumers in the other eleven Area Municipalities would enjoy a lower cost than formerly.

"Toronto Federation Makes History"

Under this heading THE AMERICAN CITY carried an article in its issue of June 1953 (pages 83-84) on the formation by an Act of the Ontario provincial legislature of the new Municipality of Metropolitan Toronto. We now have the privilege of presenting excerpts from a comprehensive paper by the Commissioner of Finance of that municipality on how this new approach in dealing with some of the perplexing problems confronting all metropolitan areas is working out.

The full text of Commissioner Lascelles' paper, in an 18-page pamphlet, is available on application to him at Toronto or to the Tax Institute, Princeton, N. J.

of new schools and coordinates the activities of each of the local school boards, which are continued in the 13 municipalities.

Welfare Planning, and Parks

Certain welfare services such as hospitalization of indigent patients, the provision of homes for the aged, and the maintenance of wards of children's aid societies have become the responsibility of the Metropolitan Corporation.

The Metropolitan Corporation is providing and maintaining a court house and a jail.

The Metropolitan Planning Board, appointed by the Metropolitan Council, has jurisdiction throughout the Metropolitan Area of 240 square miles and also on a regional basis extending over each of the adjoining townships on the borders of the Metropolitan Area.

The Metropolitan Corporation is empowered to establish metropolitan parks and green belts.

Public Transportation

Public transportation in the City of Toronto has for over 30 years been municipally owned and was operated, on behalf of the City, by the Toronto Transportation Commission—an independent authority of three commissioners appointed by the Council of the City of Toronto.

At midnight on December 31, 1953, the Toronto Transportation Commission ceased to exist as such and was succeeded by the Toronto Transit Commission, established under the Metropolitan Toronto Act.

The new commission, consisting of five members appointed by the Metropolitan Council — and including the three members of the former commission — took over the assets and undertakings of the Toronto Transportation Commission, with effect from January 1, 1954.

At the same time, the new commission became responsible for providing public transportation services in the entire Metropolitan Area of 240 square miles as contrasted with the 35-square-mile area of the City of Toronto, which was the extent of the responsibility of the former commission.

The commission was required on or before July 1, 1954, to take over the assets and undertakings of four independent bus lines operating within the suburban areas and coordinate their services with the remainder of its system. It is required to make the system self-sustaining by charging adequate tolls and fares.

During 1953 the whole of the industrial, commercial, and residential properties in each of the 12 suburban municipalities was reassessed on a comparable basis to the assessment in the City of Toronto by an Assessment Board established and paid for by the Provincial Government. The 13 separate Assessment Departments in the 13 Area Municipalities were combined in 1954 into a single department under the jurisdiction of the Metropolitan Council to ensure continuation of equality of assessment valuations throughout the area. Thus, each of the local municipalities will contribute equitably to the cost of the operation of the Metropolitan Corporation in the ratio of its assessment to the total assessment of the whole Metropolitan Area.

The Metropolitan Corporation will levy for its requirements against each of the 13 municipalities. Each of the 13 municipalities, in turn, will incorporate its share of the Metropolitan Corporation levy in its local budget. In this manner each municipality will pay its appropriate contribution to Metropolitan expenditures and, in addition, will tax its local taxpayers for the amount needed to provide the local services for which it remains responsible.

Effective January 1, 1954, the Ontario Government initiated a system of unconditional grants to all municipalities in the Province, based upon population. These grants are on a graded scale and increase from $1.60 per capita in the lowest category to a maximum of $4 per capita in the case of metropolitan municipalities and cities having a population over 750,000, which is the highest category. Metropolitan Toronto is the only municipality that qualifies for the maximum grant, which in 1954 will amount to approximately $4,500,000. This Provincial grant is intended to offset to some extent the cost of welfare services and will enable enlargement of the essential metropolitan services to be provided without substantially increased municipal taxation.

Debentures for Capital Improvements

One of the important features of the legislation establishing the Metropolitan Corporation was to take away from the Area Municipalities the right to issue debentures for capital improvements and to place such authority exclusively under the jurisdiction of the Metropolitan Council. An area municipality desiring to do a work to be financed by debenture issue must, as one of the prerequisites before entering into any commitment with respect thereto, secure the approval of the Metropolitan Council to issue the debentures for the work, subject to final approval by the Ontario Municipal Board. Thereafter, if such approval is granted, the Metropolitan Corporation will issue its debentures and such debentures become a debt of the area municipality to the Metropolitan Corporation. The area municipality is required to pay to the Metropolitan Corporation the amount necessary to meet interest and principal payments as they fall due. Debentures issued by the Metropolitan Corporation, whether for Metropolitan or local area purposes, are a joint and several obligation of the Metropolitan Corporation and each of the Area Municipalities.

It will be seen that debenture financing by the Metropolitan Corporation falls into two categories:

1. To raise the funds required to finance works that are initiated by, and the responsibility of, the Metropolitan Council, and
2. To raise the funds required to finance works that are initiated by, and the responsibility of, an Area Municipality

Interest Costs Lowered

The purpose of placing sole authority in the Metropolitan Corporation to issue debentures on behalf of Area Municipalities was to ensure the securing of funds to meet the essential needs of each Area Municipality and at the lowest interest cost possible. In this connection I may say that certain of the Area Municipalities enjoyed a very favorable credit rating on their own financial record, notably in the case of the City of Toronto, while others, due to the fact that they defaulted on their debenture payments in the depression years of the 'thirties and, also, as a result of excessive requirements due to rapid growth, were not in such a favorable financial position. By pooling the resources of all 13 municipalities, the municipalities which experienced difficulty in securing adequate debenture funds at reasonable rates are now able to undertake greatly needed capital improvements with assurance as to availability of funds and at much lower interest cost than otherwise would be the case. . . .

Progress Achieved

It will be readily understood that having been in existence for less than a year this Metropolitan Government is in an experimental stage. Un-

(Continued on page 202)

Small-Sized Snow Equipment

(Top) A blower, mounted on a short-wheel-base tractor allows easy maneuverability on city streets. (Insert) The big rotary blower shrinks to sidewalk size and still demonstrates its ability to slice away a sizable drift. Both snow throwers are manufactured by the Maxim Silencer Company, 84 Homestead Ave., Hartford, Conn.

A quick review showing how manufacturers are designing smaller snow-removal equipment for cities and are still retaining the big equipment punch

For a final cleanup in tight corners, a rotating broom—also a Gravely unit—is available to remove the last vestige of snow.

Pusher-type sidewalk snowplowing gets a little motorized assistance from equipment made by Gravely Tractors, Inc., of Dunbar, W. Va. The blades supplied are as wide as 48 inches.

Light windrow loaders also find wide use. This one, fitted to a John Deere tractor, is made by Barber-Greene, Aurora, Ill. It has a loading belt, conveyor boom, and mechanical feeder.

Earl E. Sorenson (left), equipment engineer, and John C. Tibbitts, chief clerk, have successfully guided the development of accounting methods for controlling equipment at the California Division of Highways.

Because of the close and increased interest of so many cities in keeping street-equipment records, it occurred to me that the successful methods employed by California's Division of Highways might be helpful to guide a number of municipalities. The highway equipment is much the same for cities and counties and states. The significant records are the same, and how to keep them economically as well as adequately is a nearly universal aim.—J. C. T.

Accounting for Equipment Control

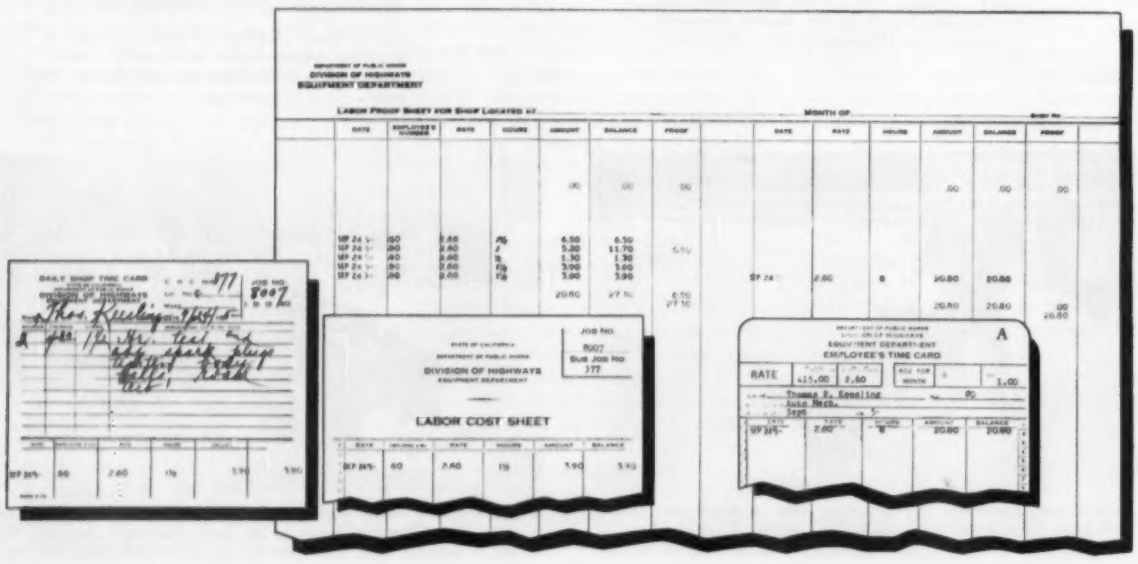
By JOHN C. TIBBITTS
Chief Clerk
California Division of Highways

OUR system begins with Daily Shop Time Cards (below, left) that show the time each shop employee devotes to each job, along with a brief description of the work done. The time cards are posted to Labor Cost Sheets which are kept by job and sub-job numbers.

The posting is done on a Burroughs Typewriter Accounting Machine which extends the rate times the hours and provides the amount due for each card and the total pay due an employee for the day. The total hours for the day and the rate are extended on the Employee's Time card (below, right insert).

A Labor Proof Sheet (below) is provided as a by-product of the posting. The Labor Cost Sheet postings (below, center insert) appear on the left side of the proof sheet, and the Time Record postings on the right side. The totals for each operation are printed on the Proof Sheet and prove the work.

As the Labor Cost Sheet is posted, the Time Card is priced in a space along the lower edge; showing the date, the employee's number, rate, hours devoted to the work, and the amount. The priced Time Cards are filed by job number to show a detailed description of the labor and



cost involved for each complete job.

During the month the operator of the Burroughs Typewriter Accounting Machine, which is used for billing, posts all requisition tickets that have been priced to Shop invoices which are set up according to job number. This operation itemizes the bill, showing the quantity, material involved and the accumulated material charge to date.

At the end of the month, the machine operator summarizes invoices by posting the total labor charge for each job onto the bill, using the Labor Cost Sheet, and to it adds the labor overhead, material and material overhead charges. The total amount of the invoice is furnished automatically.

An original and four copies of each invoice are made up. The original and two copies are sent to the department billed; one copy is retained with the job order file, and one is sent to the shop invoice file.

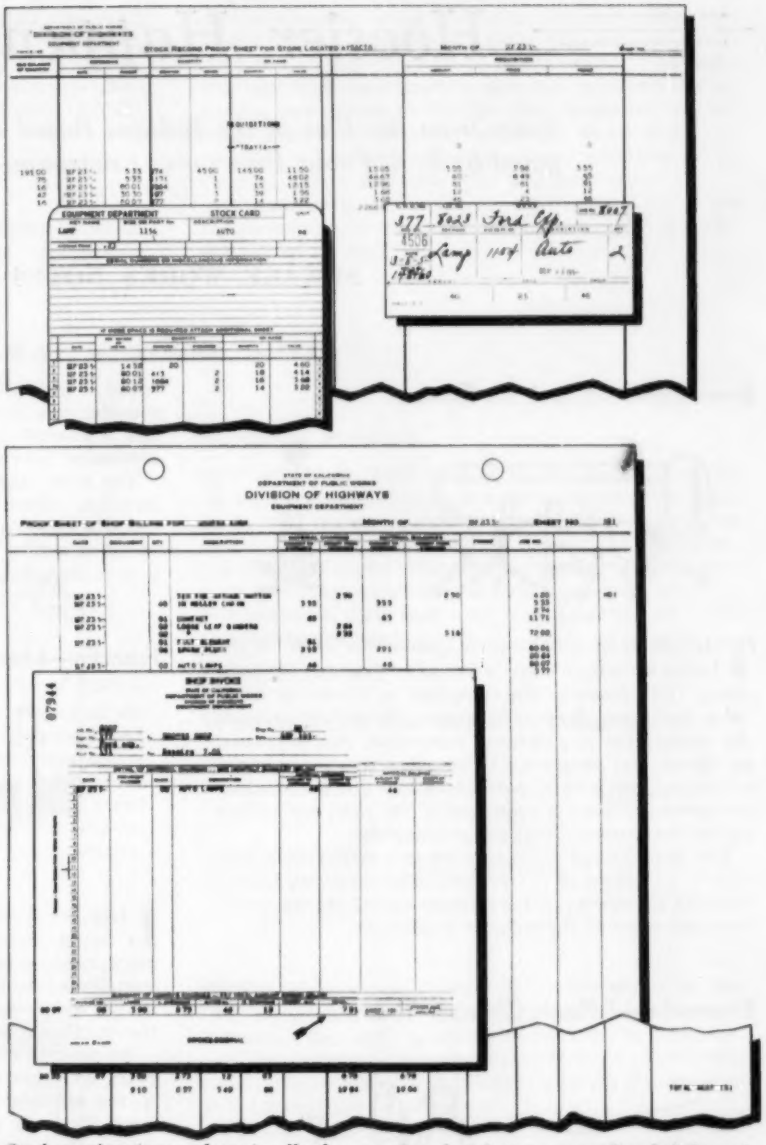
A Proof Sheet of Shop Billing is prepared as a by-product when materials are listed to Shop invoices during the month. At the end of the month, when invoices are summarized and totaled, a List of Shop Billing is prepared automatically. The totals of invoices are then recapitulated to another List of Shop Billing to determine the total billing for each account.

Value of the System

This system, with its series of logical steps and automatically provided totals and proofs, provides us with a clear-cut, current picture of labor and materials utilized in our equipment activity.

At the Headquarters Office we have Equipment Ledgers which show the usage of each of the 6,000 pieces of equipment in the Division of Highways. Each district shop sends in a monthly equipment rental which shows the extent to which each piece of its equipment was used during the month. This information, together with rental charges, repairs, depreciation and administration, is posted to the Equipment Ledger. Depreciation and administration are entered quarterly. The cash reserve is computed automatically and printed on the ledger showing, in effect, a profit or loss in the use of the piece of equipment. Losses are printed in red as a credit balance.

The over-all system not only provides us with a complete picture of equipment activities, but it supplies management with the figures necessary to determine that each piece of equipment must pay for itself.



Stock posting (upper forms) tells the quantity of each item secured and disbursed, and the quantity and value of items on hand. Billing (lower forms) provides each shop with detailed charges for each job. Journals are prepared as invoices, are posted during the month, and summarized at the end of the month to provide totals.

Ester Hill (standing), supervisor of bookkeeping machine operators, trains new operators in each district and familiarizes them with the system. Jane Ford (left) and Dorothy Franklin (right) are at Burroughs Typewriting Accounting Machines.

Hoosier Happenings

Notes from the files of the Indiana Board of Health, prepared by B. A. Poole, Director of Environmental Sanitation

SEWAGE WORKS NOTES

Brownstown—5 to 1 for Sewers

THE efforts of Brownstown (population 2,000) to get better sanitation could serve as an example for large cities. Until recently, the town had no sewers or treatment facilities. However, municipal officials enlisted the cooperation of a citizens' committee that organized an educational program. A campaign was inaugurated which included several public meetings and door-to-door canvassing to inform everyone of the need for sewers and of the proposed method of financing.

The promotional work paid off in a referendum vote of 5 to 1 in favor of the project. The little city is now building its sewers and treatment plant, thanks to the unselfish work of the citizens' committee.

Evansville—2 Plants Cheaper Than 1

A major sewer and sewage-treatment plant program faced Evansville (population 129,000), located in southern Indiana on the Ohio River. Careful analyses by the consulting engineer indicated that the construction of two separate plants would result in substantially low construction and operating costs. A single plant, the study showed, would have required expensive and difficult interceptor main construction and possibly multiple pumping stations.

The city is building these improvements in easily handled steps. The first stage consists of intercepting, trunk, and branch sewers in the eastern section of the city, and a 6-mgd sewage-treatment plant which is already in operation. The second stage, now ready for construction, includes intercepting sewers, lift station, and a 22-mgd sewage-treatment plant in the western section of the city.

The third stage will involve considerable sewer construction which will be determined by the progress made in annexing territory contiguous to the city. Also included will be the enlargement of the East Side plant to provide a total capacity of 20 mgd.

Franklin—More Filters for Cannery Wastes

LIKE the others, Franklin (population 7,400) was suffering from overloaded sewerage facilities. Its plant, constructed in 1937, could not cope with the load contributed by its larger-than-design population as well as the discharge of screened tomato-cannery waste to the municipal sewer system.

To provide more capacity, the city has enlarged the plant by repairing all existing units, replacing media in the existing trickling filter and constructing a new unit. This new filter is designed to operate at high rate during the canning season and at standard rate during the remainder of the year. The plant is now designed to treat an average sewage flow of 1.62 mgd.

Hagerstown—Imhoff Plant Undergoes Changes

FORMERLY, the sewage-treatment plant at Hagerstown (population 1,700) consisted of an Imhoff tank, two standard-rate trickling filters, and a final settling tank, all completed in 1937. Recently, this little city found itself obliged to increase the capacity of the plant.

In order to utilize as many of the existing plant units as possible, the designers decided to convert one of the filters to high-rate operation and provide facilities for

direct recirculation. The Imhoff tank was converted to a separate sludge-digestion tank. The small final tank became a chlorine contact chamber; thus the primary and final settling tanks were the only new units needed.

Construction costs amounted to approximately $69,000. The plant is now designed for a population of 2,500.

Kokomo—More High-Rate Filters

ANOTHER city to find that its municipal sewage-treatment plant, constructed in 1937, was grossly overloaded is Kokomo (population 39,000). In order to provide adequate treatment and to utilize existing structures insofar as possible, two of the four existing standard-rate trickling filters are to be converted to the high-rate type with recirculation. Also the designers are assigning new duties to the old plant units and are arranging for new primary and final tanks only. In addition, the revised sewerage system will divert considerable storm flow from the treatment plant.

The project is now ready for construction and when completed will provide complete treatment for an average flow of 7.5 mgd.

WATER WORKS NOTES

Owensville Keeps Looking

BACK in the WPA days, the 1,200 people of Owensville went some 5 miles out in the country to develop a good supply of water. Recently, however, these wells have begun to turn salty. Some evidence seems to point toward the nearby oil wells as the culprit. Today, Owensville has drilled a new well in a broad river valley, a still greater distance from the oil-separator station, and anticipates no more salt problems.

Gary Gets Filters

THE 134,000 residents of Gary now are enjoying filtered water that is free from turbidity and offensive tastes and odors. In the past, the Gary-Hobart Water Corporation has used an intake stretching a mile into Lake Michigan to supply the city with water, providing chlorination as the only treatment. This procedure was satisfactory until recent years, when water customers had to contend with turbid, bad-tasting water on stormy days. The new filter plant does away with these problems.

Incidentally, Gary is the last of the major unfiltered surface supplies in the state used for public water supply. One unfiltered surface supply still serves a community of 500, but provides fire protection only.

Pendleton Acidizes

TO supply its 2,000 residents, Pendleton draws its water supply from five tubular wells drilled to limestone. For the last number of years, water supply has been a perennial problem in the community. However, the president of the Town Board recently reported that their problems were over. Acidizing two of the wells had increased their flow until they produced as much as another new well.

Wells Weren't the Answer in Kokomo

WELLS have had all sorts of trouble satisfying the water needs of Kokomo's 30,000 inhabitants. Moreover, the wells produced water high in iron content and requiring filtering. Exploration of other areas has convinced the Kokomo Water Company that ground water is not the answer here.

Consequently, it currently is planning to build two 2-mgd Aldrich "package plant" filters, drawing from nearby Wildcat Creek for its supply. Flows in the streams will be augmented during dry-weather periods by release from an upland reservoir which will be pumped full during periods of excess stream flow.

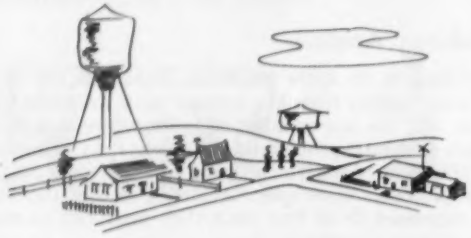
North Vernon Needed Every Drop

ANOTHER community that in the past has suffered with a more-or-less permanent water shortage is North Vernon (population 3,500). Today the state is

building a new reservoir for one of its institutions that will provide excess water for sale to North Vernon and thus overcome the difficulty.

However, the supply wasn't ready by the fall of 1953, and this community needed water badly. A severe water famine in the area virtually dried up the river supply, forcing the city to use crews with shovels and even a bulldozer crew to remove debris from the stream and free the last drop of water from every puddle so that it could flow to the water-treatment plant. These efforts, combined with rather radical water conservation, enabled the water works to maintain pressure during this emergency.

Legal Road Blocks at Hammond



THE 88,000 people of Hammond had before them every day the sight of Lake Michigan with its virtually inexhaustible supply. Nevertheless, water shortages became so frequent that, during the summer of 1953, nobody even bothered to complain when pressures dropped to 10 psi and lower. Legal road blocks stymied corrective measures. Before the city could finance needed additions, it had to carry a suit to the State Supreme Court to gain permission to do the work.

Work is in progress that will give the city two large, elevated storage tanks and over 12,000 feet of large-diameter feeder mains. Plans have been approved for a new high-service pumping station and a new clear well. Enlargement of the treatment facilities also is in the planning stage.

Anonymous—Oops!!

A LITTLE more than a year ago, the town marshal of *(anonymous by request)* noticed that the water pressure would drop suddenly at 2 a.m. Town officials made immediate arrangements to have two fire department pumper trucks connect to fire wells and pump water into nearby fire hydrants to provide an emergency supply. With the two pumpers going full speed, the system continued to lose pressure. Finally, the citizens were advised that they were faced with a critical water shortage.

The State Board of Health furnished portable chlorination equipment to treat the water coming from the fire pumpers until the electric pump was pulled from the town's one well and shipped to the factory for repair.

It needed repair all right, but the real blame for the water shortage was laid at the feet of the power company. It seems that their crews had made a mistake in reconnecting the leads for the three-phase motor. When the automatic equipment called for water, the pump started to spin, but it ran in reverse, which was of no help to the distribution system at all.

Reserve Officers Needed for Public Health Service

A DRIVE to recruit 1,000 engineers for the reserve component of the Public Health Service, U. S. Department of Health and Welfare, is now under way, according to Assistant Surgeon General Mark D. Hollis, chief sanitary engineer. The campaign is directed toward the mobilization of a corps of sanitary engineers for civil defense emergencies.

"The advent of atomic and hydrogen bombs, and the possibility of their use in any future war, make it essential that a large number of trained sanitary engineers, capable of handling emergency sanitation problems, be available immediately to help the surviving population stay alive," Mr. Hollis reported.

"It must be anticipated that most or all of the facilities on which the health of urban populations normally depends would be destroyed. These would include water supplies, waste-disposal plants, housing, and facilities for the storage, handling, and consumption of foods. Such a situation would require the rapid mobilization and deployment of sanitary engineers to areas which have been attacked, and continuing redeployment to meet changing situations."

The plan is to recruit and properly prepare these men before an emergency can arise. The benefits which accrue to these engineer reservists include: quarterly bulletins that report the engineering activities of the Service and of sanitary engineers around the world; prompt copies of new technical publications, bulletins, and releases of interest; opportunities to participate in active-duty assignments for short periods, during natural disasters or in high-level consultation; access of Service facilities, including the multimillion-dollar Robert A. Taft Sanitary Engineering Center, in Cincinnati, Ohio; voluntary assignment to training courses on such subjects as nuclear fission principles and the building of radiological monitoring instruments.

The total national defense program calls for the recruitment of 2,000 men; the remaining 1,000 to be reserve public health disciplines. Additional information may be obtained from M. D. Hollis, chief engineer, Public Health Service, Department of Health, Education, and Welfare, Washington 25, D. C.; or from the regional office of the Public Health Service located in your community.

Is "Authority" Financing the Answer?

By HAROLD F. ALDERFER, *Executive Secretary*
Institute of Local Government,
The Pennsylvania State University
State College, Pa.

LET US state at the outset—what everyone already knows—that authority financing is *an* answer to the financing of metropolitan government, although it may not be *The* answer. It is an answer for the simple reason that authorities and special districts now operate successfully in a number of metropolitan areas. The concept of the municipal authority has been made a brilliant reality of local government administration by such agencies as the Port of New York Authority, the Metropolitan Water District of Southern California, the Sanitary District of Chicago, the Hartford County Metropolitan District, and others.

To analyze past performance in this field will give a clue to the future. Why were municipal authorities created? How did they fill a void? What needs did they serve? The more obvious answers to the questions we briefly and preliminarily review.

I

The municipal authority is a governmental agency that can operate across municipal borders. Assuming that annexation is not *The* answer to the metropolitan governmental problem, the authority device makes it possible to link together established and permanent units of local government in joint enterprise.

II

The municipal authority can supply urban services to large areas and large population groups which single units in a metropolitan area either cannot attempt or cannot administer with economy and efficiency. The need for modern sewage disposal in the Pittsburgh metropolitan area as the result of a state directive to eliminate stream pollution is to be met through the agency of the Allegheny County Sanitary Authority. A unified administration of harbor and transportation facilities is carried on by the Port of New York Authority. Such services could not be rendered successfully by the established local units.

III

The municipal authority can finance large-scale construction and operation of such utilities as water supply, sewage disposal, airports, transportation, parking facilities, and housing, by means of borrowing on the basis of revenues derived for the particular project. The revenues so derived go exclusively for the financing of the particular project and are not diffused throughout a general municipal government to be spent for general or other purposes. Thus, the municipal authority operates in the nature of a private corporation and the public fully understands the direct relationship between municipal service and charges.

IV

The municipal authority can step into the breach in the walls of municipal finance where constitutional and statutory debt and tax-levy limitations, and difficult-to-raise property assessments, make it impossible to carry on expanded and new functions through regular municipal financing. While some observers see the municipal authority as a means of evading such financial restrictions on local units, the use of the authority reflects the fact that municipalities are forced to such subterfuges, if this they are, precisely because they are shackled by present state restrictions which do not take into consideration the expanded needs of the urban localities of the nation. The municipal authority is, as can be seen, a perfectly legal tool by which cities and towns can escape from the present financial straitjacket that outmoded state laws have fashioned for them.

V

The municipal authority can provide the brand-new administrative mechanism that is so necessary in solving present

The Authority Device— PRO AND CON

THIS article comprises the opening paragraphs of a paper presented at the Tax Institute Symposium on Financing Municipal Government, held in Princeton, N. J., November 18-19, 1954.

The rest of the paper explored "the field of the doubtful, the unknown, and the future," as related to the soundness of the municipal authority device. Dr. Alderfer pointed out, for example, that "authority" bonds bear a higher rate of interest than bonds backed by the taxing power of the municipality. And he said:

> Municipal authorities, it must be admitted, can become deleterious instruments of local government. They are not directly responsible to the electorate or to public opinion; they are sometimes used to evade legal restrictions on local indebtedness; they are not required to be supervised in the way municipalities of a state may be; and they are often created because of the aggressive activities of law, engineering, and financial firms who hope to obtain large fees for their services. . . .
> But, in general, they have proven themselves high grade, useful, and precise instruments of public service.

A more critical comment on the "authority" device, by Carl H. Chatters, formerly Executive Director of the American Municipal Association, appears on the next page.

local government problems. Members of governing boards can be drawn from the upper executive echelons which are simply not available to regular municipal government. They can be attracted to these civic responsibilities often for the very reason that they are unpaid, that their participation is nonpolitical, and that the functioning of the authority is not hampered by the detailed and often ridiculous statutory restrictions that bind regular municipal officials. Furthermore, many of these persons live outside the confines of the central city and, therefore, would be ineligible for responsible municipal positions there.

The municipal authority makes it possible again to utilize such persons in local civil government in a big way, and not merely as councilmen in a small residential community across city lines. Thus, it has turned out that here more than in any other area of local government imaginative enterprise, flexible and elastic outlook, modern administrative methods, long-term management, stabilized policy, and aggressive functional leadership are encouraged and give great promise for future growth.

Success in municipal authority administration is not written in terms of votes, but is spelled out in the X-ray eyes of the money market where authority bonds are sold, and in the profit-and-loss columns of financial ledgers. In the municipal authority all the sound practices of a private corporation can be utilized in the interest of the public. On the other hand, the municipal authority preserves some of the advantages of a public body, for its bonds and property are not taxable, and it is generally more free from state regulation as to rates, audits, and financial procedure than private utilities.

Another Point of View

A Comment on the Foregoing Paper

By CARL H. CHATTERS
Consultant on Municipal Finance

HAROLD ALDERFER'S excellent paper on the use of authorities deserves praise for its clarity. It sets forth clearly and fairly the use of authorities to help solve the problems of metropolitan government. Mr. Alderfer knows and states that the authority *is* an answer but not *the* answer to all metropolitan problems. This letter then is not a criticism of Mr. Alderfer's position but a warning to those who might read into his statement some implications that he evidently did not intend to convey.

Unless authorities are carefully planned they may perpetuate the disintegration or lack of integration in the metropolitan area. The end objective is a unified government for an entire area to the greatest degree that such unification is politically desirable and economically feasible. Freezing a single function or activity into an authority may prevent the unification of all government. In the process of transition from the present hodge-podge of many governments in a metropolitan area to more logical arrangements, some separate authorities or independent agencies may be necessary. Even the new Toronto Metropolitan government retains the Toronto Transit Commission to handle all public passenger transportation in the area except taxicabs and steam railroads. But a careful look ahead is needed in any metropolitan area before the "fractionating" is frozen even more thoroughly into the governmental structure.

Local Government's Greatest Hazard

The greatest hazard to local government and to well-balanced federal-state-local relations is the so-called "vertical functional autocracy" which has developed largely as a result of grants-in-aid. In simple terms this means that the officials and employees representing a function such as health, welfare, or education are more concerned with their own function in the particular government they represent. Some authorities may be used to perpetuate and strengthen this unfortunate situation.

The authority device has limitations which should be clearly understood by all. Mr. Alderfer would be among the first to recognize and state these limitations. Failure to recognize these limitations has proved costly to American local governments when viewed from a financial angle. While it is true that the bonds of many authorities have a better credit rating and bear lower interest charges, than the primary or traditional units of government, still there are widespread areas where authorities not only cause high interest costs but also further divide the responsibility for government.

Experience in Pennsylvania, New Jersey, and Connecticut

The law creating Pennsylvania School District Authorities is a good—or bad—example. Since these authorities are the vehicles for transmitting state aid for school buildings to local school districts, the state aid should have reduced building costs and the carrying charges on the debt. The opposite happened to an astounding degree. Such an excellent credit as Abington Township is yielding 2.40% interest on 20-year maturities of the Abington Township School District Authority, when the Township itself would pay from one-half to three-quarters of 1% per year less for the money. On even shorter maturities, the bonds of Hilltown Township, Bucks County, (Pa.), School District Authority are selling to yield 2.75%. Scores of others could be cited.

But Pennsylvania is not the only state to act in this way. New Jersey, aiming to assist in sewage-disposal plans, authorized the use of sewer authority districts. Thus we find the Lambertville (N. J.) Sewer Authority bonds maturing in 18 years selling to yield 3.55%, while bonds of Linden, N. J., on the same date and same maturity were yielding 2.30%. But it is fair to note that the bonds of the Hartford County Metropolitan District, cited by Mr. Alderfer, sell at the same very low rates of interest enjoyed by the City of Hartford, Conn., one of America's prime municipal credits. This demonstrates that, when authorities are used, they should be set up to get low interest rates and not as a device for greatly increasing them.

Alternatives That Should Be Considered

Before resorting to the authority device several alternatives should be considered. When an authority is created, as is the case in so many states, to get around arbitrary debt or tax limits, a greater attempt should be made to broaden the debt and taxing power of the primary governmental units. The same groups that work for these limits suffer from the higher interest costs paid in many cases by authorities.

Another alternative to the authority is greater power in American counties to provide services for the entire county including all of its cities. This has been done for health administration in scores of counties, for water supply in others, for welfare administration in most counties, and for tax assessing in half of America's counties.

If an authority is set up to solve a metropolitan problem, the law should not make it possible to freeze that authority into the structure of government so that it can not be modified when an over-all plan of metropolitan government is developed.

Finally, a positive approach is the best alternative to the use of authorities as a temporary solution to metropolitan problems. Concerted effort under competent leadership is needed to develop a mechanism or series of alternative mechanisms for integrating government in our metropolitan areas. The absence of each mechanism promotes the creation of undesirable alternatives which may prevent the ultimate working out of our metropolitan governments on a sensible rational basis.

Yes, authorities are useful, but there are other and better alternatives in many cases.

Lansing and Michigan officials conduct a frontal attack to protect the city's shade trees

This B-17 had the peaceful assignment of helping to rid Lansing of the gypsy moth.

The Case of the Gypsy Moth Larvae

By H. LEE BANCROFT, *Superintendent of Parks, Lansing, Mich.*

THERE was no doubt about it, dirty work was afoot in Lansing. The city had a tough and elusive little intruder that threatened to disturb the peace, damage property, and cause all sorts of trouble for us and our neighbors. And he was wily enough to require more than an ordinary summons to bring him in.

Our city streets boast about 34,000 beautiful shade trees. In addition, there are many trees on private property that the Forestry Department inspects without charge, since a healthy tree benefits not only its owner but also the entire city. On one of these inspection calls, we discovered the villain.

We took him into custody and shipped him off for identification to Dr. Ray Hutson, head of the Entomology Department of Michigan State College. Dr. Hutson immediately contacted Carl Fenner, of our Forestry Department, and Cyrus Boyer, chief of the Division of Plant Industry, State Board of Agriculture. They put their heads together, studied the criminal, and finally identified the innocent-looking specimen as a gypsy moth larva.

Control Measures Begin

As all of us know, when the gypsy moth appears, every shade tree in the area is in danger. Mr. Boyer immediately recognized it as a problem of concern not only to Lansing but to the entire state. He immediately called a strategy meeting of officials, and some assistant experts on the control of these pests.

While Mr. Boyer was organizing a large-scale attack, the city went to work on a local basis. We immediately started to spray the trees, using a new Bean Mist Blower, which effectively cleaned up all the dangerous locations reported.

But to make control of this enemy permanent was more than a one-shot affair. It required advance publicity to spread the information that our shade trees faced a danger, and that countermeasures were progressing. Mr. Boyer arranged all of these details. He called for, and received, timely help from the U. S. Department of Agriculture, issued releases to the papers and radio stations, had a film flown in, contacted the Governor and Administrative Board for funds, and succeeded in securing their full support for the program.

His chief method of attack was by air. He secured bids for aerial spraying around the affected area, thus establishing a protective belt. He checked insurance and public liability, secured permits for low flying over the city with multiengine planes, and did an all around effective piece of administration.

The aerial spray contract was awarded to Central Aircraft, of Yakima, Wash. It constituted the first aerial spray job ever attempted over Lansing. Sunday was selected as the day for the aerial attack, thus minimizing traffic difficulties. The aircraft company brought in an old B-17 to do the job.

Airborne Attack

In general, the airborne attack on the moth was an operational success. We have had a defoliation of three of our 34,000 trees, and even they are now growing a a new crop of leaves. Seven goldfish died in a small pool, and one lady developed an allergy for DDT. This is the sum total of the casualties suffered by the defense.

We are grateful for other benefits that the aerial spraying has provided for our shade trees. An unusually large canker worm problem has disappeared. The walnut caterpillar also is gone. And finally, the spray cleared our city of flies and mosquitoes for a time. After the last heavy rains, some of the mosquitoes returned, but in far fewer number. Aphids may have been worse this season, but this could have been caused by an unusually lush growing season.

During the summer, the gypsy moth larvae should pupate, or change from the caterpillar stage to the moth, and thousands of traps were baited and set to snare the male moth, which flies. Not until the tests have been evaluated can the full effectiveness of the spray be measured.

However, as for the city and its environs, never have we seen so many gardeners and golfers enjoying their freedom to work and play without the nuisance of flies and mosquitoes. Our trees are clean again of many chewing worms which do yearly damage; and the more dangerous gypsy moth, we are sure, has been convinced that it has no future in Lansing.

Plant Superintendent Ralph Aeschelman checks operation of the plant's Accelators.

Archbold, Ohio, builds a surface-water reservoir and filter plant big enough to meet its needs and has an exciting time putting them into operation

Not Enough Well Water

By D. E. HAZELSWART *

ARCHBOLD is a quiet little community in northwestern Ohio with a population of 1,500. It was always a pleasant place, except for two grievous problems: it didn't have enough water; and the water it did have tasted like mineral oil.

The troublemaker was a natural gas deposit which underlies this section of Ohio. The well water, with a hardness of about 350 ppm, is so loaded with gas that it will ignite. One day a party of hunters ducked into the city pumphouse during a rainfall, made themselves comfortable, and proceeded to light their pipes. The result: boom! no roof and singed hunters.

Survey Undertaken

Despite the gas-laden water, the community continued to thrive. By 1950, the demand for water exceeded supply. The city fathers then conducted a survey to determine how large a plant should be constructed, pumping from a nearby creek to a raw-water reservoir. Since the city's industrial establishments, at that time, were depending upon their own wells to serve them to some extent, the survey's calculations showed a demand for water that was lower than the requirements that finally developed.

Archbold decided to build a plant able to deliver 750,000 gallons of water per day, and retained Emerson Wertz, consulting engineer, to prepare plans and supervise the construction of the new installation.

Mr. Wertz designed a 14-foot-high earthfill, square reservoir, with 975-foot walls, which could store 100,000,000 gallons. The walls are rip-rapped from the base to the high-water mark with a 16-inch layer of rock, ranging from 2 to 5 inches in size. A concrete-crib intake, 6 feet square and 21 feet high, is located near the filter-plant end of the reservoir. The intake, placed about 15 feet from the shore, is provided with ports placed at intervals of 7 feet and 9 feet from the bottom, through which the water leaves the reservoir.

The pumphouse, located on the creek bank, holds two Peerless turbine pumps rated at 1.5 and 0.7 mgd respectively. The pump wet well has a 2-foot-square opening protected by a 1½-inch bar screen. The station operates only when the stream has a good flow after a rain.

Treatment Procedure

The filter plant is compact. A 10-inch line from the reservoir feeds the plant by gravity, but two small electric pumps can help the water along if the level in the reservoir becomes low. The plant uses an Infilco Accelator upflow unit to treat the water with alum, lime, and chlorine. A Builders Iron Foundry meter records the raw-water flow and an automatic timing device controls the removal of sludge from the Accelator. A small settling basin follows the upflow unit. However, the Accelator does such a thorough job of removing flocculated material that the settling basin has never yet collected any measurable

* Donald E. Hazelswart is serving as superintendent of water supply, at Defiance, Ohio, and has served in an advisory consulting capacity since the Archbold plant went into operation.

amount of sludge from the water.

The water passes from the settling basin to the two filters, each rated at 375,000 gallons daily. Each filter is equipped with a Palmer rotating surface-wash to keep it clean. Infilco air-control units, rather new to the water field, handle all filter operations from a single control table. One innovation used is a small manual valve at the table that can change controller rates instantly. An air compressor and storage tank naturally are required for this system.

The filters have an unusual underdrain system. Transite pipe laterals are encased in porous concrete blocks, designed by Infilco, that form the bottom layer of media. This permits the use of an unusually small size of stone in the first layer.

A Wallace & Tiernan chlorinator feeds the liquid chlorine and a Neusol diaphragm pump feeds Calgon to stabilize the water and prevent corrosion. Chlorine is applied at the Accelator; and Calgon is fed into the clear well after filtration is completed.

The filters deliver water to a clear well that measures 50 feet in length, 30 feet in width, and 11 feet in depth. This well has a 2-foot-diameter, backlighted, dial-type depth gauge mounted on the filter-room wall. Three Peerless turbine pumps deliver the water to the distribution system; two are rated at 300 gpm, and one at 600 gpm.

The pumps are located in the basement along with the pipe gallery, the Accelator drains, the boiler room, and the compressor for the filter controls. The main floor houses an office, chemical storeroom, chemical feeders, and laboratory.

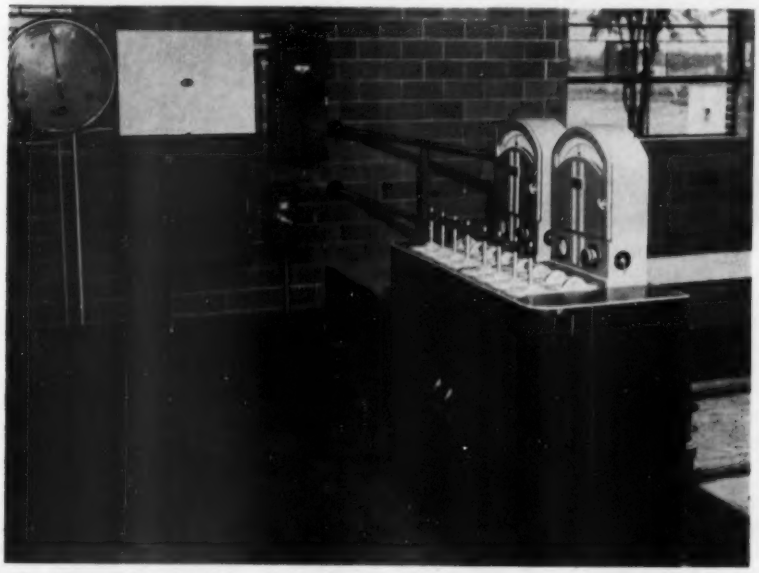
Beginning of Service

The plant went into service without mishap. However, exciting times were ahead. Since Archbold was in the midst of a drought, the reservoir was less than 15% full. Consequently, the city decided to supplement the treated surface water with water from the wells. That was a mistake.

During the first evening that well water started through the distribution system, bedlam broke loose. Protests jammed telephone lines, and one factory closed down because it was afraid that the strong taste of the water would affect its product. So the city stopped using the wells and the repugnant taste disappeared.

We made inquiries to discover the cause of this remarkably strong taste, which seemed like a chlorophenol. The best guess was that gas or petroleum products in the well water had reacted with the chlorine.

Our solution was to aerate — to pump the well water over the bank of the reservoir and let it splash over the rocks, then treat it with the surface water. This worked perfectly. Algae growths are curbed by applying Phelps Dodge copper sulphate once a summer. A burlap bag, containing 16 pounds of crystals, hangs from a boom on the rear of a truck and is dragged through the reservoir shore water at a speed of 5 to 10 miles per hour. The slight algae taste that develops occasionally in deep water is counteracted by 1 or 2 ppm of activated carbon mixed dry with the hydrated lime.



The filters and controls are completely arranged so that the staff can keep a sharp eye on all phases of treatment and thus ensure that operations move along smoothly

Accelator Performance

The uncovered Accelator works well, though it freezes a bit in winter. The city has considered providing cover with a building extension. The alum and slaked lime are fed by Infilco volumetric feeders into solution pots, then are overflowed to the Accelator by pipes.

Originally, chlorine was added to the settled water, but better-looking water is produced when it is fed into the Accelator. Filter wash water and Accelator sludge pass to a sump outside the building, where the water decants to the creek by way of an 8-inch sewer.

During construction, an accident to the clear well demonstrated the need for elevations above ground-level. The well was complete, painted with a sealer, and ready to be sterilized when rain washed a nearby manure pile into the well, making the engineer and the builder unhappy. The runoff had to be pumped out and the wet well scrubbed with HTH solution. In the meantime, the foundation walls were laid above ground-level.

Water Mains Anchored

The need for solid anchorage of water mains developed after a few months of operation. The main leading to the town passed through an opening in the basement wall that was caulked firmly with lead. The line from the pumps makes a 90° bend and was mounted on a concrete pier, but not anchored. One night a line surge blew out the lead joint, knocked a pump loose, and broke the bases and a pipe tee — obviously enough to confuse even an experienced operator.

The reservoir receives highly turbid water. However, turbidity quickly settles and the water reaching the plant is clear enough so that you can watch the stocked fish nibble the bait.

At the time of plant construction, the city acquired a 150,000-gallon elevated tank, erected by the Pittsburgh-Des Moines Steel Company. It supplements the two smaller tanks that the city had, one holding 60,000 gallons and the other, 100,000 gallons.

STAGE ONE. Model showing the present extent of the Long Beach Municipal Auditorium within the crescent-shaped Rainbow Pier Lagoon.

STAGE TWO. Completion of the oval-shaped Recreation and Exhibit Hall, a new bandstand, and extensive parking areas are features of this development stage.

Three-Stage Expansion of Convention Facilities Begins in Long Beach, Calif.

THE Long Beach Municipal Auditorium, in its park-like setting within the Rainbow Pier Lagoon, is a major factor in our city's convention life. It likewise has assumed greater stature as the scene of the crowning of Miss Universe.

The deterioration of the timber piles in the pier, the silting of the lagoon, and the need for expanded convention-hall facilities dictated remedial measures involving a major face lifting in this area.

Financing Plan

On January 21, 1954, the voters authorized expenditure of $2,750,000 for construction of a Recreation and Exhibit Hall adjacent to the existing Auditorium. Later, an additional $1,575,000 was approved in a similar manner, as planning developed a more ambitious program than first contemplated. For this sum of money, Long Beach will obtain facilities that are unsurpassed for conventions, shows, and sporting events.

The City Attorney opined that Tidelands Oil funds could properly be used for constructing and equipping such a building, as well as such additional construction as might seem necessary or desirable to combat land subsidence. Contemplation of possible additional offshore oil drilling makes subsidence a major factor to be considered. Land, in the harbor area, approximately 2 miles from the site, has already sunk some 20 feet and is still sinking.

Reports submitted by Dr. McCann and Dr. Wilts, of the California Institute of Technology, indicate a total subsidence of 13½ feet might reasonably be expected in the auditorium area. On the basis of these reports, and other factors, it is planned to raise the present surface bounded by Rainbow Pier an average of 16 feet, with a maximum fill of 47 feet. Material for this fill will be obtained by hydraulic dredging. During construction, all surface improvements in the area, with the sole exception of the Auditorium, itself, will be removed, the enrockment around the Pier sealed, and

STAGE THREE. Proposals for the completed project, showing the rebuilt lagoon with its walks and landscaping accompanying the existing Municipal Auditorium, the new Recreation and Exhibit Hall, and the new relocated bandstand.

the lagoon filled. After the initial fill has been made, it is our intention to create a smaller, quiet-water lagoon, approximating 9½ acres, contained within a curved retaining wall on the north and the Rainbow Pier on the south.

To clarify planning, a three-dimensional model of the area involved was constructed by the Engineering Staff. Scaled 40 feet to the inch, it is as exact in every detail as it was possible to make it. Its value was proved in rectifying landscape design as well as the location and scale of the various other surface improvements to be constructed. Additionally, because of the rather controversial aspects of the project, it has been extremely valuable, public relations wise, in demonstrating the planned construction and revision to civic clubs other departments, and the general public. It was the principal display of the Long Beach Chamber of Commerce at the Los Angeles County Fair held in Pomona, September 17 to October 3, 1954.

Three Phases of the Work

As the photos show, the model demonstrates graphically three phases of the work. *Stage One* is the present, with all existing improvements and structures in place. *Stage Two* shows the fill completed, the new Recreation and Exhibit Hall adjoining the Auditorium, recreational facilities and the envisioned new bandstand relocated. *Stage Three* adds the new Lagoon, complete with its walks and planting. These stages are interchangeable and have been most useful, not only in demonstrating intended actions, but in developing them.

The Recreation and Exhibit Hall, itself a reinforced-concrete structure, is to be elliptical in shape, 411 feet long, 360 feet wide and 105 feet high. It will accommodate 15,000 persons without a single internal column or pillar to interfere with view. It will provide 370 exhibit spaces, 10 feet square. It will be equipped with two 30-passenger elevators, escalators, and 12 glass enclosed stairways cantilevered from the outer wall. Ice shows and hockey matches will be provided by a 200-foot by 100-foot ice rink which can be set up within 12 hours. Basketball and most other indoor competitive sports will find accommodations here. Complete air-conditioning and heating systems, facilities for telephone, telegraph, radio, and television transmission and reception, a flexible and remotely controlled lighting system, and the latest in high-fidelity sound installations are but a few of the many features that will be incorporated in the building.

After the fill is in and during the course of constructing the building, the two parking lots shown flanking the Auditorium in Stages Two and Three will be built. These lots will hold 1,200 cars, and will, of course, be supplemented by other existing parking facilities in adjoining areas. These latter are shown in all three stages. Access streets to the Auditorium area will be improved or widened to help ease peak traffic flow.

Cost of Project

Minimum estimated cost for the Recreation and Exhibit Hall is $3,375,694. Other construction costs will boost this figure to $5,100,000. Another $1,500,000 will be required to prepare the site. While the costs are large, the rewards are great. This facility, which was started in January 1955, will provide an appropriate setting for the Miss Universe Contest and should become the convention center of the West.

(Left) Sacks of refuse load easily, neatly, and quietly into the hopper of a Leach Packmaster truck. (Center) A workman can pile four and sometimes five sacks on a single hand truck. (Right) the same hand truck can bring out only three of the containers.

Paper Bag Liners for Refuse Containers

Hartford, Conn., experiments with noise-muffled refuse collection

THE metallic clatter of a garbage can banging against the loading hopper of the collection truck may be forever silenced if the current test of a new refuse-collection system is successful. The new method was developed at the request of Carlton Sharpe, city manager of Hartford, Conn.

A large, tough, water-resistant paper bag is the key feature of this method, now on trial. The bags are used as liners for conventional garbage cans. The householder deposits his refuse into the bag, rather than into the bare can, and the collection crews then remove the bag without moving the can. The present plan is to supply each householder with a number of bags which he will use to line his container whenever the crews remove one that has been filled.

For a supply of these bags, the city enlisted the help of a paper bag manufacturer, the Union Bag and Paper Corporation, of New York, N. Y., who designed a bag to fit the standard-sized refuse containers used in Hartford. Each sack is 47 inches in circumference and 34 inches high, or 8 inches taller than the can itself. They are of two-ply construction and are provided with wet strength by a melamine resin content, produced by American Cyanamid Company. The sacks hold 80 pounds of dry material or 40 pounds of soaking wet material. In Hartford, the average contents of a garbage can is 25 pounds.

The use of the bags appears to have reduced the collection work load. The crew in the test district has been cut from 29 to 20 men, with no loss of efficiency.

In connection with the tests, the Department of Public Works modified the hand truck used for transporting cans from back yards to the curb by adding a light metal frame. This permits a man to pick up and transport as many as five bags of refuse during each trip.

The use of the bags is expected not only to reduce noise, but also to eliminate spillage both in the back yards and in the collection hopper; to improve the appearance of the streets by doing away with the lineup of cans at the curb; to eliminate fly, rodent, and odor nuisances by maintaining clean cans; and to generally save on maintenance costs. Each bag costs 6 cents.

Review of Collection System

The city has been studying its entire collection system since last April when it put into service a new incinerator. On June 1, the Department of Sanitation established regulations requiring separation of garbage and other combustible refuse from the noncombustibles, such as bottles and tin cans. The regulation requires garbage to be wrapped and placed in the same container with other combustibles. The container must not exceed 25 gallons in capacity. A packer-type truck collects the garbage and combustibles, and an open truck makes a separate collection of the balance.

Studies by the city involve the procedures of set-out crews who bring containers to the curb, manpower requirements for returning containers to the rear of the buildings, and the use of canvas bags and other containers for collection. The use of paper sacks is one of the more unusual phases of the study.

A summary report of this study will be available within the next two or three months. It will represent the joint efforts of not only City Manager Sharpe, but also of Dr. A. L. Burgdorf, director of health; Holbrook Bourne, chief of sanitation; Charles W. Cooke, director of public works; and J. Henry L. Giles, engineer.

A Century Old And Still Good

101-year-old cast-iron pipe removed for overpass shows excellent condition

By DEWEY W. JOHNSON
Cast Iron Pipe Research Association
Chicago, Ill.

The appearance of Chicago's skyline today must be a great surprise to this old pipe that went underground in 1853.

ONE of the first water mains ever laid in Chicago was recently uncovered at the corner of Adams Street and Wacker Drive during the excavating necessary to build a concrete overpass that connects with the new Congress Street Super Highway. This 12-inch, cast-iron main was installed 101 years ago and was discovered to have remained in excellent condition. Sections of the main, laid in Adams Street, east of Wacker Drive, are still helping to serve the business establishments.

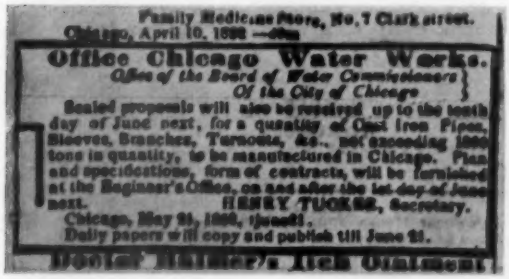
The uncovering of this century-old water main aroused considerable interest. A search through the early newspaper records of the Chicago Historical Library brought to light many sidelights on the early construction and laying of these 101-102-year-old mains. In fact, a copy of the first advertisement for the purchase of water mains by the City of Chicago was found and is shown below in comparison with an advertisement of last year (right). (Legal advertising has not changed much in a century of publication.) This first call for pipe bids, dated May 21, 1852, asked for quotations on 1,800 tons of cast-iron pipe and fittings.

The newspapers of that year also contained reports of the daily progress that the contractor was making in the laying of the mains. The pipe along State Street was installed on September 27, 1852, the same year Marshall Field & Company was founded, and two years before Carson Pirie Scott & Company was formed.

The 16-inch, cast-iron main at the corner of State and Adams was installed on September 27, 1852. It extended west along Adams to LaSalle and connected with an elevated tank at that corner. This city lot for the tank was purchased for $8,750, providing the purchaser would pay $37.06 for the repair of the sidewalk damaged by the installation.

These century-old mains were installed by Contractor J. Fuller. During the summer of 1852, he laid 1,125 tons of the 1,800 tons contracted for; the balance was installed in 1853. At that time, fire hydrants were selling for $24 each, cast-iron pipe for $44.50 per ton, and pig lead for the making of the joints for 5 cents per pound. By the end of 1853, the contractor had installed 30 miles of water mains, ranging in size from 3 inches to 16 inches. Chicago was just starting its phenomenal growth to become the business metropolis of the Middle West and had a population of 35,000.

Today, there are over 4,000 miles of pipe in the Chicago system ranging in size from 4 inches to 54 inches in diameter, and delivering water to 4,190,000 people in Chicago and the adjoining suburbs.



Family Medicine Store, No. 7 Clark street.
Chicago, April 10, 1852 —ohm

Office Chicago Water Works.
Office of the Board of Water Commissioners
Of the City of Chicago

Sealed proposals will also be received up to the tenth day of June next, for a quantity of Cast Iron Pipes, Bleeves, Branches, Turnouts, &c., not exceeding 1800 tons in quantity, to be manufactured in Chicago. Plan and specifications, form of contracts, will be furnished at the Engineer's Office, on and after the 1st day of June next. HENRY TUCKER, Secretary.

Chicago, May 21, 1852, (June?)
Daily papers will copy and publish till June 21.

Doctor Hunter's Rich Ointment

1852 Advertisement ←

LEGAL ADVERTISEMENT
DEPARTMENT OF PURCHASES, CONTRACTS AND SUPPLIES

Chicago, January 8, 1954

SEALED PROPOSALS will be received by the City of Chicago until 11:00 A. M., C.T., Friday, January 22, 1954, at Room 401, City Hall, Chicago, Illinois, at which time and place the bids will be opened and read on the following:

CAST IRON PIPE FITTINGS

Design, construct and deliver at the Central Park Avenue Pumping Station, 1015 S. Central Park Avenue, Chicago, Illinois, Cast Iron Pipe Fittings, Expansion Joints, Studs, Bolt Studs, Nuts and Gaskets as shown and billed on City Drawing PD 503.

BID DEPOSIT $300.00

→ 1954 Advertisement

The filter-equipment building also serves as a diving platform.

Mount Pleasant introduces some new ideas in swimming-pool design and construction

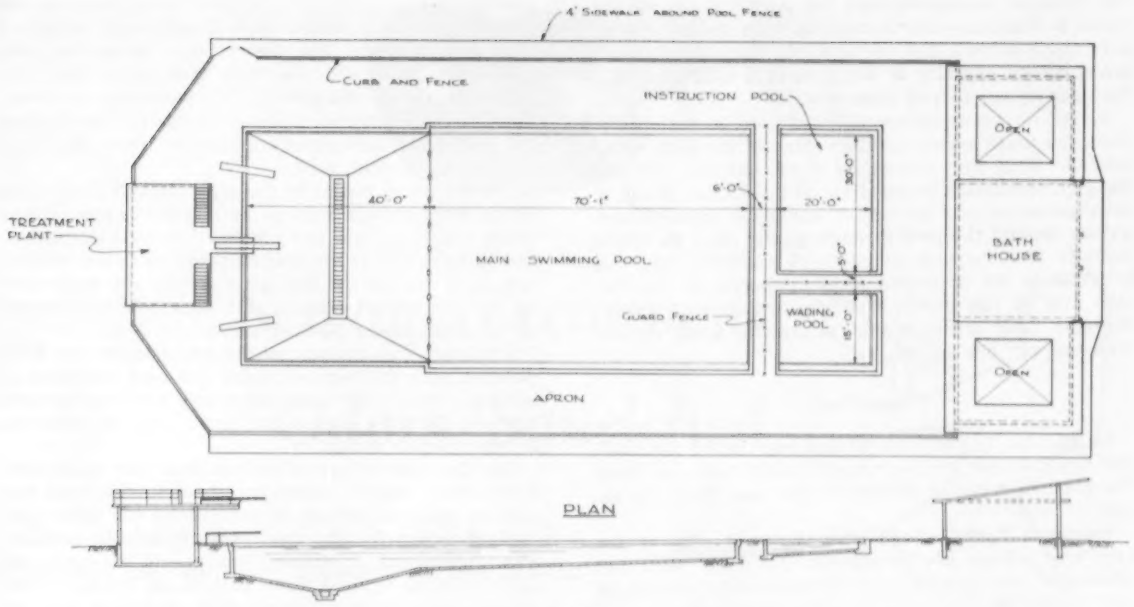
A 3-in-1 Pool Project

By H. R. VEENSTRA *and* R. E. BARRETT
Stanley Engineering Company
Consulting Engineers
Muscatine, Iowa

MEMORIAL DAY 1954 marked a milestone of municipal progress for Mount Pleasant, Iowa, when city officials dedicated and opened the new municipal swimming pool. The story of the pool's construction is one that is repeated too many times throughout the country. In the summer of 1952, drownings in unsupervised swimming places near Mount Pleasant focused the city's attention on the need for providing supervised swimming for the young people of the community. Alarmed civic groups circulated petitions urging the city council to take action.

On August 19, 1952, by special election, voters au-

The three pools—swimming, wading, and instruction—group together to make an efficient unit.



Line drawings, provided by the Stanley Engineering Company, illustrate the general arrangement of the pools.

thorized the city to contract indebtedness and issue bonds that would permit the building of a municipal swimming pool. Approval was registered by a majority of over three to one. The council surveyed nearby municipal pools, but quickly became convinced that Mount Pleasant's pool had to be tailor-made in order to meet the specific needs of the community.

Factors such as size, location, pool arrangement, and the existence of neighboring recreational facilities, peculiar to Mount Pleasant, all had to be considered in the design. Consequently, the city retained the Stanley Engineering Company, of Muscatine, Iowa, as consulting engineers to design and supervise construction for the project.

The plan selected was a rather unusual arrangement of three pools: one for swimming; one for instruction; and one for wading. The main pool is 110 feet long, 50 feet wide, and holds 234,000 gallons. The diving area is 40 feet by 50 feet, with a maximum depth of 10 feet. It is situated at the end of the pool nearest the treatment plant. The water depth in the remaining portion of the main pool varies from 3¼ feet to 5 feet. Wall anchors on each end of the main pool provide seven 7-foot-wide roped lanes, parallel to the 110-foot length, for racing events.

The wading pool has been elevated from its usual classification as a "little mudhole," by moving it close to the main pool. In this way, it is possible to make the recirculation from and to it a part of the main pool recirculation. Design requirements are set for a complete turnover of the wading-pool water every 30 minutes. The pool is 15 feet by 20 feet and has a water depth varying from 6 inches to 1 foot.

The instruction pool features another interesting innovation. Youngsters in Mount Pleasant take their swimming seriously, so the design includes a pool dedicated solely to teaching of new swimmers. The pool measures 20 feet by 30 feet and has a water depth that varies from 1½ feet to 2½ feet. Turnover rate for the instruction pool has been set for 90 minutes.

Sunbathers have the use of concrete walkways between the pool and the enclosing fence. These walkways are a minimum of 16 feet in width and slope 4 inches to drains located midway between the wall of the pool and the enclosing fence. The area on the roof of the treatment plant is also available for sunbathing.

Bathhouse

The design of the bathhouse has been developed to a functional pattern from the inside to the outside. The floor plan gives special attention to the traffic pattern of persons coming to the pool, those returning from the pool for short periods, and those readying themselves to leave the pool.

Stubwalls adjacent to openings in the building provide a maze for privacy. One-way turnstiles allow those coming from the pools to enter the bathhouse without going through the foot bath; however, the exit to the pool necessitates a trip through the foot bath in compliance with the Iowa Board of Health requirement.

Open-air dressing rooms keep these facilities dry and minimize the fungus-type diseases which tend to flourish in damp, poorly ventilated dressing rooms. A partial roof around the dressing room protects permanent fixtures and minimizes damage that might result from year-round exposure to the weather.

Filtration

The building housing the filtering equipment has been placed at the deep end of the pool in such a manner that the roof deck may be utilized for sunbathing and as a platform for the 3-meter diving board. Stairways on either end of the building provide access to the roof deck, eliminating the wet, slippery treads of a conventional steel-diving platform.

The State Board of Health requirements set forth a six-hour turnover rate which was the basis for sizing

the filtering equipment and for maintenance of the water at drinking-water standards. Two diatomite pressure filters provide this purification. They have a combined design capacity of 800 gpm at a filter rate of 3 gpm per square foot of filter area.

Water for recirculation and filtration is withdrawn from the drain system in the center of the deep-water section. This line serves as a suction line for the 800-gpm circulation pump ahead of the filters. Water is returned to the pool through 30 adjustable inlets spaced evenly around the pool through piping sized to assure uniform flow through all inlets. A make-up tank was provided in the treatment plant to operate on the suction side of the pump, with the water level in the make-up tank actuating a float control valve on the water-supply line to the pool.

Location

In addition to the basic design features of the pool, the location also received much study, not only from the population-center standpoint, but also from the aspect of esthetics.

Saunders Park, located near the west edge of the city, was chosen as the site for the pool. This site offers the best location from the standpoint of population center and also permits use of an existing recreational area. Two small creeks flow through the naturally rolling terrain of the park, and the trees of the park are a scenic backdrop. One hillside serves as an amphitheater setting for the pool.

The engineers felt these surroundings should largely influence the determination of the outward appearance of the bathhouse and treatment plant, as well as the colors to be used throughout the pool. Buff-colored tile walls in the bathhouse and treatment plant contrast the verdant setting. White trim on the bathhouse and treatment plant complements the buff and green and provides a fresh, clean appearance to the buildings.

The color scheme for the pool is seafoam green on the floors and walls to a point 6 inches below the water level. The remainder of the walls and the curbs are finished in sky blue. This color combination imparts a blue-green color to the water and sharply defines the feeling of clean, pure water. Handrails, diving platforms, ladders, and floodlight poles are buff to carry a continuous effect from the buildings down through the pool and provide for harmony between the blue of the curb and the white trim on the buildings.

The manager of the pool provides some interesting comments on the operation of the pool during the 1954 season. He has been especially pleased with the regulated flow of the traffic in the bathhouse. In practice, the traffic pattern reveals no conflict between persons entering or leaving the pool, and assures that all persons will pass the toilet facilities, the shower facilities, and the foot bath without supervision. Swimmers returning to the bathhouse for brief periods use the one-way turnstiles for entrance to the bathhouse and return to the pool through the foot bath.

The local Red Cross chapter provides swimming instruction. The inclusion of the instruction pool has proved its worth and has generated enthusiastic praise by those giving the lessons. All new swimming classes continue in the instruction pool until the students have overcome their fear of the water and have mastered the basic fundamentals. Then, as the class progresses, it is moved into the large pool. In this way, more classes can be handled at the same time, with segregation of the beginners and the advanced classes.

During regular swimming hours, many parents may use the instruction pool with their small children and thereby get some recreation without being separated from their children. The separation of the wading pool, instruction pool, and the main pool by a chain-link fence also affords the parents the opportunity of swimming in the main pool without having to worry about the youngsters accidentally wandering from the small pools into the main pool.

The design of the curbs has also received many comments from management as well as swimmers. Curbs of the pool walls are at walk level. A wide gutter section is employed in the wading pool and in the instruction pool, and in the shallow water of the main pool up to the deep end. The narrow, hand-hold type of gutter is used around the deep water.

Maximum day attendance the first season was 2,000 persons, with 600 persons inside the pool enclosure at one time. Even this unusually heavy load was handled without difficulty due to the traffic and use patterns incorporated in design.

The first year of operation has been very successful. Even with modest admission charges, the pool had already received enough in revenue by the latter part of July to pay for the total year's operating expense. The townspeople of Mount Pleasant and the surrounding area have utilized their pool to the fullest extent and are happy with the supervised swimming area for their young people.

Cost

Construction cost of the pool was $86,736.25, which was divided among the various elements of the project as follows:

	Per Cent
Pool structure	30
Runways, lighting, site grading, painting, and accessories	27
Treatment and piping system	29
Bathhouse and treatment plant	14
Total	100

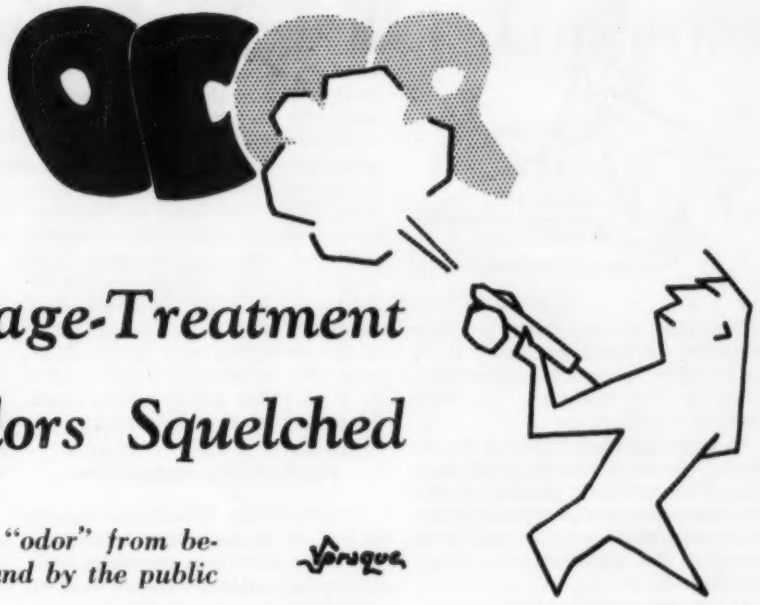
This cost was achieved by careful functional design without sacrifice of features essential to maximum utility, safety, and sanitation. The project was constructed under the administration of Mayor Rudolph Eckey. General contractor was L. C. Luethye, Inc., of Durant, Iowa. Treating, filtration, recirculation and accessory equipment were provided by Elgin-Refinite, Division of Elgin Softener Corporation, Elgin, Ill.

Land-Borne Aircraft

IS a plane that doesn't fly still a plane? And is the pilot of a land-borne plane really a pilot?

It took a battery of attorneys of the Civil Aeronautics Administration many hours of thought and study to answer these questions. The problem was posed by a complaint that "a person who holds no pilot certificate has bought an uncertified aircraft. He has moved the aircraft to a large field surrounded by trees, and proposes to sell 'rides' for $1. The rides consist of taxiing around the field."

The lawyers' decision: the operation was "completely intrastate, exclusively on the ground, in an area in which no other air commerce can be endangered or affected" . . . and that the CAA should forget the whole affair.



Sewage-Treatment Odors Squelched

How to keep the "or" in "odor" from becoming an "or else" demand by the public

By JOHN R. SZYMANSKI
Superintendent of Sewage Treatment
New Britain, Conn.

TAKING the *or* out of odor is a common problem. It resolves itself into the following phases:

1. Obscure or offset an obnoxious odor, OR tolerate unpleasant conditions.
2. Remove an obnoxious odor, OR expose yourself to criticism.
3. Counteract an obnoxious odor, OR produce a condition contrary to health and esthetic rules.

The field of odor control is wide and varied. Many have written technical papers on this subject; many others are conducting investigations aimed at discovering a universal odor-control agent.

Until such time when the ideal agent is produced, the rest of us have to make do with agents able to solve specific odor problems in the plants under our direction which, in my case, is the New Britain (Conn.) sewage-treatment plant.

The Basic Cause

The basic cause of the *or* is present in all types of plants; small primary-treatment plants as well as fully developed secondary-treatment plants. Regardless of type or extent of treatment, a residue — sewage sludge — always results. It is my opinion that sewage sludge, whether raw or digested, from primary treatment or secondary treatment, provokes the odor problem at a sewage-treatment plant.

Before analyzing this further, let me list the facilities for sewage treatment and sludge disposal at New Britain. Our plant consists of the following basic units:

1. Bar screens
2. Triturator
3. Grit-removal tank
4. Primary sedimentation tanks
5. Aeration tanks
6. Secondary sedimentation tanks
7. Sludge disposal, including conditioning and storage, vacuum filters, incinerator.

At New Britain, the fresh sewage arriving at the plant does not cause an odor problem. Investigation has traced the odor problem to the vacuum-filter area during the dewatering of mixed raw primary and biochemical sludge. The odor arising is very unpleasant.

In order to operate a modern sewage-treatment plant efficiently and economically, it is necessary to maintain a staff of competent employees. To retain employees of this caliber, it is necessary to maintain a high standard of working conditions. The first step toward attainment of this goal is the removal of unpleasant working conditions, whether esthetic or physical. Odor nuisance is, of course, an important physical factor.

A step-by-step review shows how we achieved odor control:

Odor Masking. To mask the unpleasant odors, maintenance men mopped the floor frequently with Creosolis compound in various dilutions. This resulted in a temporary masking of the sludge odor. However, it produced a new odor that nauseated most of the employees; moreover, the frequency of mopping required was costly in materials and man-hours.

Another experiment, with a pine-oil compound, resulted in the same troublesome conditions.

Odor Cancellation and Counteraction. The next step was an attempt to neutralize the existing odor by dispersing a fine mist of chlorophyl mixture at various points in the filter room. This decreased the intensity of the odor, but was also excessively expensive. Furthermore, the sprayed mist produced an objectionable residue.

Next, a circulator applied the same chlorophyl mixture to the most objectionable area, and the end results were somewhat better than any agent used up to that point. However, again the high cost of materials prompted further investigation.

New Agent

During this search for a satisfactory control agent, a circular on Cifon N. Y. came to the plant. Basically, Cifon N. Y. is a solution of orthodichlorobenzene and orthemul

which upon dilution forms a stable emulsion. Orthemul and Cifon N. Y. are products developed and manufactured by Fine Organics, Inc., New York, N. Y.

An attack on the problem at the indicated source of odor was the next step. This required treating of the raw mixture of sludge prior to chemical conditioning for vacuum filtration. For this, we decided to use the new Cifon N. Y.

At the New Britain plant, the raw mixture of sludge is pumped into two 20,000-gallon storage tanks. Under normal operating conditions, 9,000 gallons of sludge is pumped into each tank. The average solids content of this sludge ranges from 7% to 7.5%. Each tank has an access inspection manhole through which the dose is applied.

After trying various concentrations, we found that the optimum for the reduction of the malodorous condition to a tolerable state was 1.5 gallons of concentrated Cifon N. Y. to 9,000 gallons of sludge. Although air mixing is used at the plant in these storage tanks, laboratory tests have indicated that mechanical stirring gives comparable results. It normally takes about four hours to discharge the sludge. Consequently, on a fill-and-draw schedule, the agent is in contact with the sludge mixture for two to six hours. The satisfactory results obtained at the major source of the prevailing odor in the filter-room area encouraged us to use Cifon N. Y. at other points where conditions were not so pronounced.

Further Experimentation

Although New Britain has discarded use of its sand-filter beds since 1937, there have been occasions when due to maintenance shutdowns of filters and incinerator, it has been convenient to pump the raw sludge onto several of these abandoned beds for disposal purposes.

During the summer season of 1954, while construction was proceeding on the municipal refuse incinerator, it was necessary to pump sludge to the old sand filters. This provided the opportunity to advance experiments of our agent by dosing two beds with Cifon N. Y. and leaving two beds untreated to serve as controls. Results showed a minimum of odors and fly-breeding on the treated beds. The dosage used was similar to that used at the plant during the filtering procedure.

Other tests with the agent reveal that the spray application reduces obnoxious odors at the vacuum-filter exhaust. Also, a highly diluted solution has been used satisfactorily in floor mopping procedures. Indications are that it is also helpful in insect control and odor control of garbage in the dumping pit of the new incinerator plant.

In conclusion, it can be said with confidence that the *or* in odor at sewage-treatment plants and refuse incinerators can be greatly controlled by the use of this agent in appropriate dilutions.

Films for the Municipal Engineer

A FILM guide providing complete information on Westinghouse sound motion pictures and slide films is now available. The 36-page catalog classifies film subjects in three groups: general interest, product information, and training films and instruction courses. All sound films, both in color and black and white, are loaned without charge and are available in 16mm size.

The catalog, B-6505, may be obtained from Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa.

Other recent films include:

Mexico Goes Modern

Sound. Color. 30 min.

First part of film depicts scenery, homes, and buildings in Mexico; second part portrays the sewer-system cleanup and the success of the country's investment in approximately $300,000 worth of equipment.

Available on loan from Flexible Sales Corp., 351 West Jefferson Boulevard, Dallas, Texas.

Design for Excavating

16mm. Sound. Color. 12 min.

Filmed at job sites, the movie demonstrates the advantages of the ½-yard excavator crane, mounted on a heavy-duty crawler tractor. Shows versatility of machine's use as a shovel, backhoe, dragline, clamshell, crane, pile driver, and bulldozer.

Available on loan from Caterpillar-Hyster dealers, or Hyster Company, Portland 8, Ore.

Safe Exit

16 mm. Sound. Black and White. 20 min.

Prepared for fire and municipal officials and building inspectors to portray the need for ample building exits in terms of actual equipment.

Available on loan from Von Durin Division, Vonnegut Hardware Company, 402 W. Maryland St., Indianapolis 9.

New Jersey's Cities Plan

THE DIVISION of Planning and Development of the New Jersey Department of Conservation and Economic Development has completed a survey of the status of municipal planning and has found that of the state's 567 municipalities 65% have zoning ordinances, 56% have planning boards, and 44% have subdivision control legislation.

How large an increase is represented by October 15, 1954, figures and may be seen by the following table:

	1945	1952	1954
Planning Boards	120	266	320
Zoning Ordinances	250	338	371
Subdivision Controls	55	167	249
Master Plans	18	88	112

Copies of New Jersey's planning legislation may be obtained in loose-leaf form, by county and municipal governing bodies and planning boards, from the Planning Section Room 422, State House Annex, Trenton 7, N. J. Each item should be requested by code number as shown below:

Municipal Planning Enabling Act (1953) MPL-1; Official Map and Building Permit Act (1953) MPL-2; Municipal Zoning Enabling Act (1928) MZL-1; New Jersey County and Regional Planning Act (1934) CPL-1; and State Planning Act (1934) SPL-1, SPL-2, and SPL-3.

How to Buy Good Police Uniforms

There are in the United States approximately 300,000 municipal police officers who spend nearly $30,000,000 a year for uniforms. Probably in no other field of purchasing is so much money expended in the absence of a dependable guide. The method usually followed in purchasing uniforms is a constant patching of specifications in an endless effort to eliminate last year's pitfalls.

By DAVID E. SINGER
Franklin Worsted Company
New York, N. Y.

A MIDWESTERN state spending thousands of dollars a year for uniforms recently discovered that their seven annual bidders on uniform *fabrics* consisted of five jobbers and two uniform makers. Not a man from a mill was a bidder. A checkup showed that the state had been paying over a dollar a yard above mill price for their State Police uniform fabrics.

The same type of situation was revealed in a recent call for bids on finished uniforms. There were five bidders and the prices were remarkably similar. Inquiry — by a mill representative, not by the Police Department — showed that all the bidders were jobbers or contractors representing the same prominent uniform maker.

How do these things happen? They happen because in most city halls there is no one who knows anything about weaving or tailoring. There is no reason why there should be such specialists in the police, fire, transit, or park departments. It is important, however, to obtain reliable information as an aid in setting up sound fabric and uniform—separate—specifications. Obtain the fabric information from a mill—a number of reliable mills are listed in the *Municipal Index*—and your information on uniform making from a bona fide uniform manufacturer.

Fabrics and Uniforms

Keeping the fabric and tailoring separate is more important now than ever before. The textile industry has brought forth fabrics made of synthetic fiber blends, such as wool and Dacron or wool and Orlon. Are these good? Are they better than 100% wool? Well, don't buy them without asking advice from your mill. Most mills have experimented with fabrics of wool blended with synthetic fibers. It should also be kept in mind that the purchaser can overbuy as well as underbuy. After getting the best advice on fabrics, buy with knowledge of the type of work performed by the wearer, the climate in which he works, style of garment needed, and the price.

Matching of Color

The factor of matching may not be important in the case of rough work clothes, but it is most decidedly important in the case of police uniforms and in the dress uniforms of firemen. For over 60 years police and fire departments used wool dyed uniform fabrics. Then came the wars and the municipal departments bought other types of serges and whipcords. In many cities, police officers' trousers and blouses do not match in shade; they fade, and they wear thin faster than they did 30 years ago. Yet, top quality stock dyed fabrics are again available and can be obtained if specifications know how to ask for them.

The words "or equal" are intended as a fair trade practice and may be mandatory where public funds are spent. It is only safe to mention a manufacturer or equal, such as "Material to be ABC Mill's Style 3848-6 or equal," when a purchaser has on hand samples and specific specifications which produce the mentioned number. In this way, you will know your cloth as a tested, satisfactory article.

There are advantages in the purchaser specifying a specific mill. In the first place, this usually means that the mill has a cloth that suits the particular requirement. Second, if a mill knows that a city will buy 2,000 yards of uniform fabric a year, a stock can be carried and production can be planned for best delivery. Otherwise, deliveries take from 10 to 12 weeks. Third, specifying a specific fabric places responsibility with that one mill. Fourth, when the city knows the manufacturer of the fabric, a change in uniform maker need not disturb the continuity of standard uniform equipment. Fifth, the city is protected as to cost per yard.

By specifying a fabric which bears profusely placed seals of identification (KAUMAGRAPHS) on the reverse side of the cloth, any number of local merchants may sell the official uniform without control being lost by the municipality. Where men are permitted to shop for uniforms, the Kaumagraph will make sure that the official uniform is maintained. If goods have been specified that bear no identification, then cooperation between the city purchasing authority and the mill is mandatory in order to protect the buyer against substitution.

The Local Merchant

The uniform stock in the store of a local merchant is probably intended for local bus and cab drivers and postmen. Being a local merchant and taxpayer, he is entrusted with the submission of bids for municipal or state police uniforms. The merchant writes to the firm from which he buys his stock merchandise and obtains a bid. This way the city never gets bids from the uniform manufacturers who should be bidding.

What's wrong is that the request for bids should go to a list of national uniform manufacturers known for their first-class work. In the city's specifications there may be a proviso that the successful bidder establish a local merchant as his representative. Thus, the local merchant will retain his function and the uniforms will be made by a competent house—and the police department, the city purchasing agent, and the city manager will know everyone with whom they are doing business.

About 90% of Superior's collection routes are alley pick-ups. Two laborers and one Load-Packer truck service 200% more households than were serviced previously with an open truck and three in crew. Unpaved alleys, plus heavy winter snows, provide six months of bad driving conditions, so Superior has adopted tandem-axle trucks.

By E. W. BERG
Assistant Director of Public Works
Superior, Wis.

Superior switches to modern equipment and improves collection work at bargain rates

200% Better Refuse Sanitation

TODAY, our city is enjoying a refuse-collection service that has been improved 200% at virtually no increase in the cost of collection. Dollar costs, following the cost-of-living trend, have increased over the years. But providing modern, sanitary refuse collection for the 35,500 residents of Superior, Wis., costs no more than our old, unsatisfactory system would have, were we still using it.

Our approach to this accomplishment was not spectacular, but a simple matter of cold dollars-and-cents figuring, forced upon us by a limited budget and the need for better sanitation. The key was the efficient use of personnel, made possible by modern waste-collection equipment. Because our results have proved to us beyond a doubt that we could not afford to be without our modern equipment, perhaps our experience will be of benefit to other cities.

Prior to 1948, our city used six open-type trucks, each with a driver and three laborers, to collect garbage and rubbish. This equipment and manpower was sufficient to provide refuse-collection service only once every three weeks in residential areas and weekly in business districts. Ashes were not picked up at all during the year, but accumulated in alleys until spring, when three extra trucks and a front-end loader were assigned for an entire month to collect and dispose of them.

Our refuse-collection service was a long way from being adequate, and it certainly wasn't what our citizens desired. Furthermore, the prospect of improvement in the immediate future looked bad. The rapid growth of automatic heating after World War II meant that the tonnage of combustible household refuse that ordinarily would be burned in coal furnaces would have to increase. Also, our dump, which required a round trip of 7 miles, was full. We had to replace it with a new dump, twice the distance away, doubling the nonproductive travel time of crews and trucks.

Limited Budget

The addition of more equipment and manpower to improve service always had been blocked by an old and common municipal problem — lack of money — plus a tax rate which citizens already considered high. (Unfortunately, a too large portion of public works department funds always have been needed for snow removal because of our northern climate and the 42 square miles contained within city limits.) Despite the limitations of our budget, we were determined, in 1948, to find a way to provide at least weekly refuse-collection service.

A careful review and analysis of our waste-collection practices indicated that a major basic fault with our system was inefficient use of manpower. Labor, our most expensive cost item, couldn't possibly be used efficiently on our open trucks. High loading heights made collections slow and tired our crews. The

small load capacities required frequent trips to the dump so that crews were idle during disposal trips.

To achieve a more efficient program, we arranged for demonstrations of packer trucks that were being used in other cities. We found that every packer unit could carry larger refuse loads than our open trucks, at the same time eliminating one of the laborers needed for loading.

Simple arithmetic enabled us to calculate that even the most expensive packer truck would improve our refuse-collection service without increasing our costs. The one laborer we could eliminate on each truck would save us at least $3,000 a year, or far more on a yearly basis than the cost and maintenance of one modern packer truck.

New Equipment Saves Time and Labor Cost

Based on speed and ease of loading, safety of personnel, and the ability to compact maximum loads, we replaced our six open trucks with Load-Packers in 1948 and 1949. The city was then divided into five collection districts, based on equal volumes of refuse produced. A Load-Packer, driver, and two Gar Wood loaders were assigned to each district.

The large capacity of our new packers, plus the ability of crews to load them quickly and with a minimum of effort, enabled us, in just one year, to step up residential collections of all refuse from once every three weeks to once each week, and business collections from once to twice weekly.

The improvement was accomplished at an annual cost which was comparable to our old methods. We had one less collection truck to operate and maintain; and one driver and six top loaders were eliminated from refuse-collection payrolls for a labor savings of well over $20,000 a year, which easily paid for our new equipment.

The efficient use of manpower made possible by our packers was the key to this accomplishment. One-third fewer men were able to work 200% more efficiently than was possible with our open trucks. Our men could get more done because they could load any and all waste faster. Easier loading also eliminated the strain of lifting waste containers into high bodies, so that the work efficiency of our men didn't decrease because of fatigue as they approached the end of the work day or week. Finally, only two trips to the dump for disposal were required each day for each truck, so that nonproductive crew time was decreased.

Although we had achieved improved waste-collection service, we were again forced to look for additional improvements after a couple of years of operation. In 1952, it was noted that increased combustible refuse (because of population increases, but primarily because of more automatic furnaces and the trend toward greater production of combustible waste) was starting to tax our collection capacity. One of our obvious problems was that each of our five packers had to work five days a week throughout the year to maintain normal collection service. We had no spare packer, so occasional down time for maintenance upset operating schedules.

Before purchasing a needed sixth packer for a spare, we again reviewed our collection practices to discover what could be accomplished to meet future increases of refuse tonnage most economically.

The significant finding was that collection crews, loading two packer loads a day, actually finished loading a 13-yard packer at least 30 minutes before both lunch and quitting time. This rapid loading meant that one hour of collection time was lost on each unit each day while trucks traveled to the dump. Simply by extending the loading time of each packer at least one hour a day, we could add 25 hours of collection time each week to our fleet to give us additional collection capacity without increasing costs significantly.

On this basis, we planned to purchase bigger packers to extend crew loading time for full-shift collections. A special 18-yard Load-Packer was purchased in 1953 to replace a smaller packer which was assigned as a spare unit.

The larger body enabled the crew to load right up to lunch time for the first load, and right up to quitting time for the second load. The driver went without a lunch period and worked extra time after the loaders were through for the day to make the two trips to the dump. Drivers ate lunch on the job. The little extra expense of working the driver longer hours more than paid for the additional five collection hours realized each week on this unit. Also, reserve load capacity on this unit meets the problem of ever-increasing refuse production from each household.

Future Improvements

We soon will replace another small packer, which will be sold, with a new 20-yard model to gain similar additional loading time and capacity. Within a couple of years, all six of our packers will be large models, so that we can insure our present collection schedules without increasing the number of trucks or crews.

Our present waste-collection and -disposal budget is $100,000 yearly, or about $2.80 per capita based on a population of 35,000. This cost is only $15,000 a year more than it was six years ago, and may be accounted for by wage increases and higher operating costs. Consequently, we believe that the 200% better refuse-collection service we are getting, plus better sanitation, is more than a bargain. Such service has been made possible primarily because our manpower now is used efficiently, thanks to modern equipment.

Jacksonville, Ill., Picks Prestressed-Concrete Pipe

PRESTRESSED-CONCRETE pipe received the nod in Jacksonville, Ill., for the 23-mile pipeline that the city plans to build to bring water to its 20,000 inhabitants. The line will draw water from the Illinois River by means of a Ranney caisson-type well with horizontal well points located in the water-bearing gravel.

Choice of pipe was between prestressed concrete and cast iron. However, bids received indicated that the installation of cast-iron pipe would cost $236,000 more than concrete. On the basis of this savings and with the concurrence of the consulting engineer, the city accepted the bid using the prestressed-concrete pipe.

Price Brothers Pipe and Construction Company, of Dayton, Ohio, will supply the pipe; Ranney Methods Water Supplies, Inc., of Columbus, Ohio, will construct the well; and Caldwell Engineering Company, of Jacksonville, Ill., will build the pumping station and supply the equipment.

The supply line will deliver the water to the Jacksonville treatment plant. N. J. Butler, managing superintendent of the Jacksonville Water, Light, and Power Department, plans to provide such treatment to the water as appears necessary.

Municipal Public Relations

The City Tells Its Story

Edited by PAN DODD WHEELER
Executive Director, Government Public Relations Association

Richmond's Most Valuable Resource— Its Young Citizens—Developed by MPR

THE City of Richmond, Va., doesn't wait until its citizens are 21 years of age to make friends with them. Its juniors in the less-than-voting-age group get special attention from the city government and the city schools. Both the city and the junior citizens benefit.

"Too much is said and written," youthful Mayor Thomas P. Bryan thinks, "about 'citizens of tomorrow'." The mayor says that Richmond has tried to show its teenagers that they are citizens now. Given proper information and direction the young people can and do make a valuable contribution to community life. Moreover, what they learn now and do now fits them for better adult-citizenship later, Richmond officials believe. The city also benefits from its attention to junior citizens in another way. The enthusiasm of the youngsters affects the interest and participation of their parents in municipal affairs.

Course In Government Given High School Seniors

The Richmond plan—a "brain-child" of M. Virginia Sydnor, head of the History Department at Thomas Jefferson High School—includes attendance at bimonthly Council meetings, follow-up classroom discussions, reports about Richmond's municipal operations, interviews with councilmen, and talks by city government officials.

Students use their knowledge of government to discuss city operations effectively and intelligently with their elders; to urge action on the part of citizens of voting age; to encourage voting on municipal matters; and to operate their own model school governments.

"Intelligent citizens," Miss Sydnor maintains, "don't develop suddenly at 21. Training must begin long before the age of majority. So, we're doing laboratory work in city government. This is recognized as an excellent teaching device." Three years ago, Thomas Jefferson High School instituted a half-year required course in government, taken by seniors. About 90 students are enrolled annually.

At the beginning of each course, Miss Sydnor writes to the mayor, explaining purposes and objectives of the class and listing those who are enrolled. The mayor writes an individual letter to each student, expresses his enthusiasm for the program, and invites students to attend Council meetings and to visit the city hall.

Students may attend Council meetings or do outside readings and reports about city government. Those who attend Council sessions receive a copy of the evening's agenda and a paper, "Information on Council Procedure," which identifies each councilman for them and tells how the Council meeting is conducted. The mayor always welcomes students as the session opens.

On Tuesday mornings following Council meetings, the government class discusses action at the meeting the night before. City officials are often invited to speak to the class and they take advantage of the invitations.

During the course, each student must interview a city councilman and report on that interview. Through the interviews with an elected representative, city government becomes personal to the student. As one class member explains it, the city government loses its "far-awayness."

Carol Jacobs, member of the 1955 senior class and the Thomas Jefferson High correspondent for the *Richmond News-Leader*, is now "interested in what the Council is doing as never before." She says she'll "probably never be an active politician," but now "knows she can go before the Council and express an opinion." She's learned, "I don't have to be 'somebody' for the Council to listen to me."

Another 1955 senior, Jimmy DeVoe, is intrigued by the way the city operates. Of his Council attendance, Jimmy says, "The student gains an insight into city problems and the way in which these are solved. Without the government class, we might never learn this."

In 1952, members of Miss Sydnor's government class conducted a block-by-block campaign urging people to vote. Classroom activities also stress participation in government. Thomas Jefferson students have their own governing body modeled on the United States Congress. In the future, Miss Sydnor hopes to begin a program centering around operations of the state legislature.

The government study plan is spreading to other high schools in the Richmond area. And at Council meetings an increasing attendance of teenagers is recorded. Some parents, who hear their sons and daughters discuss city affairs, are going along to Council meetings—many of them for the first time.

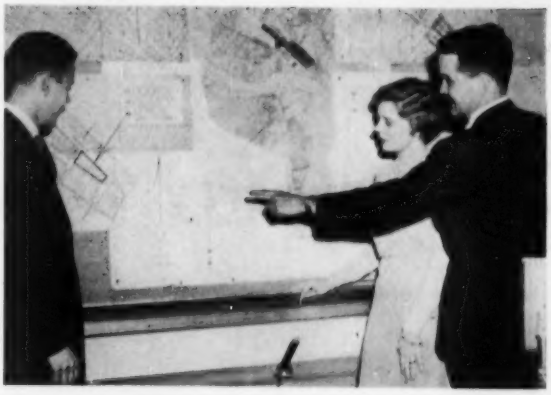
The Thomas Jefferson High School plan has many

GPRA Honors THE AMERICAN CITY

A SPECIAL CITATION, for the "pioneering editorial effort, the space, time, and energy," this magazine has devoted to the "aims, purposes, techniques, and operations of municipal public relations," has been presented to THE AMERICAN CITY by the Government Public Relations Association.

"Especially," the citation reads, "we are grateful for the pages devoted to municipal public relations." Editor Harold S. Buttenheim and Associate Editor Douglas S. Powell were mentioned in the award. Text of the citation was written by J. Bryant Horne, Personnel and Public Relations, Jackson, Miss.; William Parrott, Village Clerk, Village of Patchogue, N. Y., and Joseph Zatman, Public Relations Officer, the Maryland-National Capitol Park and Planning Commission, Silver Spring, Md.

Government Class Members. **Richmond's junior citizens (top to bottom) are given an agenda and an explanation of council procedure by gatekeeper James W. Enroughty as they enter the council chambers; Mayor Thomas P. Bryan explains a planning problem; teenagers listen and learn during the session; a student tries out mayor's gavel as the meeting adjoins.**



things to commend it. Classroom study in the government course provides the student with necessary background. Attendance at Council sessions gives him a taste of actual government problems that complements his study of theory. The letter from the mayor and the attention given him and his classmates by the Council stimulates him still further. All these experiences make the student recognize himself as a citizen of Richmond.

This plan has positive values for the city government. The Richmond government reaches a large number of homes directly and personally through the students enrolled in the class. The student homes are literate ones —potentially productive of active and enthusiastic citizens in the students themselves, their parents, neighbors, and friends. Through such activities as the "get-out-the-vote" campaign, the government class students do a real job for the community. The class is building up an intelligent interest in municipal governing during the years of the student's life when lasting patterns of thinking and working are being formed.

If your city has been treating its young people casually, thinking of them only as "tomorrow's voters," or not thinking of them at all, consider the Richmond approach. It indicates there are benefits for the city and for the young people when they are treated as "today's citizens."

Editorial Note: All the information for this article and the pictures were provided to these pages by Miss Sally Richardson, Junior Management and Budget Officer, City of Richmond, Va.

New Folders Have Citizen Appeal

INFORMATION-TO-CITIZEN folders published late in 1954 or early this year are characterized by their brevity, use of color, convenient shapes and sizes, attractive format, and by their direct appeal—in words as well as appearance—to the citizens. Exemplary are the following:

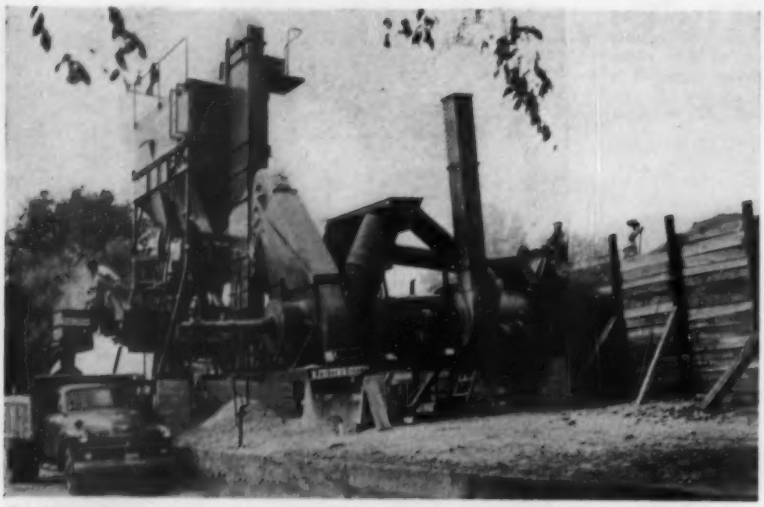
BLOOMINGTON, ILL.—A 15-inch by 5½-inch report folds twice vertically. It lists major activities of the city government, a financial statement, contains a letter to citizens and a sheet of city phone numbers with the admonition: "Attach this to your telephone directory."

DENVER, COLO.—White paper, royal blue and chartreuse make this 17-inch by 7½-inch folder (folds once vertically, once horizontally to mailing size) a handsome tax leaflet. Cover features a halftone of the two sides of a silver dollar. Source and use of Denver's tax dollar are shown graphically.

EVANSTON, ILL.—Yellow paper, charcoal ink on an 8½-inch by 10-inch folder is the color and size of this folder which explains the organization of the city government, lists all officers, shows aldermen by wards and includes their home and office phone numbers.

NORFOLK, VA.—Charts showing where the city gets its money and how it is allocated feature this "Timely Message" from the city manager to the people. The 8-inch by 8-inch white paper (with green ink) folds to convenient mailing size.

UNIVERSITY CITY, MO.—A small 9½-inch by 6-inch mailer raises and answers the question: "What does my tax dollar buy?" City services are shown via line drawings and there is a paragraph explaining each. The letter in the folder is signed: "Your City Council."



Denison expects to operate its new 40-ton asphalt plant 11 months out of the year.

Denison, Texas, establishes a self-supporting paving program, using new city-owned equipment, and wins strong public support

The Property Owner Pays 40c Per Square Yard

DENISON, Texas, located near the banks of the Red River that separates Texas from Oklahoma, is a remarkably distinctive city for its moderate size and 19,000 citizens.

The general public finds it interesting because it is the birthplace of President Eisenhower. Those studying municipal government find it distinctive because it is a southwestern city with a 15-mgd (million gallons per day) water surplus, created by

A residential street in the outskirts of Denison gets the benefit of a new asphalt surfacing.

the new Denison Dam on the Red River. This rich water resource, especially in view of almost desperate water shortages elsewhere, naturally attracted new business and new people. Consequently, the city has had to face the problem of growing pains. In overcoming this, it has developed still another unusual point of civic interest — a thrifty, practical street program.

Program Details

This street program came into being and has developed under the guiding help of Mayor Harry Glidden, Street Commissioner Clarence H. Weideman, Commissioner B. F. Lacy, and City Engineer E. C. Drumb. It has been greeted with enthusiasm, thus giving it another point of distinctive interest, since it is a "grass roots" program and the property owner pays all the cost — 40 cents per square yard.

For their 40 cents the property owners receive a street consisting of a 6-inch stabilized gravel base with a 1½-inch hot-mix machine-laid asphaltic concrete surface. Previously, surfacing for these residential streets consisted largely of oil treatment over a gravel base. This type of double asphaltic "squirt job" had only a relatively short life of about three years. After that period, the maintenance problem of patching potholes became serious.

Costs for the old method appear to have been about 27½ cents per square yard, but maintenance costs after the first few years of service increased this figure to the point that, in early 1954, the city decided that a more comprehensive, property-owner participation program was merited. City Engineer Drumb estimated that some 75 miles of residential streets needed surfacing immediately.

New Equipment Acquired

The variety of paving conditions made formal contracts awkward. To simplify matters, Denison decided to do the work with city equipment, much of which had to be purchased. One major unit was a Barber-Greene Model 840 multiple-aggregate asphalt plant, complete with dryer, mixer, gradation control, and cold-aggregate feed system. Another was a B/G asphalt finisher to handle the actual spreading of the asphaltic mix. This equipment had arrived and was ready for work by the middle of last summer.

Before the end of the season, the city had completed paving on more than 14 blocks of its new program, and had received funds to pay for nine more. Early this winter, property owners circulated petitions to cover an additional 50 blocks of paving. Engineer Drumb estimates that the city will pave at least 20 miles of streets during 1955.

In addition, the city has found many others interested in the asphalt processed in its hot-mix plant. Some 3,300 tons have been purchased for a housing project at Perrin Air Force Base. The Texas Highway Department has approved the plant for the production of asphalt mix for its use, and the nearby cities of Sherman and Gainesville also have indicated their desire to become a customer.

When selling mix to outside sources, the city will charge $4.75 per ton f.o.b. the plant.

This allows them a profit of just a fraction over $1.03 per ton, as may be seen from their cost figures:

Fixed charges per ton (includes writeoff on all equipment over a 5-year period)	$ .2638
Operating cost per ton, including plant fuel	.4817
Maintenance of plant equipment	.10
Crushed rock	1.35
Sand	.12
Asphalt	1.3962
TOTAL PER TON, F.O.B. PLANT	$3.7117

Aggregate Sources

The crushed limestone that is used is quarried about 6 miles from the plant, and the city pays $1.50 per yard for it. The blow sand is excavated by a city dragline at 25 cents per yard and the asphalt is delivered to the plant site for $23.68 per ton.

For their 6-inch gravel base, the city operates its own pit, loading, crushing, and hauling the material as needed.

Operation of both the Barber-Greene plant and finisher are economical as to manpower. At the plant, one man is employed as an operator; another tends the boiler, the dryer, and the asphalt transfer pump, while a third dozes the cold aggregate material into the feed system. A fourth man, the superintendent, oversees the operations.

During the first six months of operations, these four plant employees also constructed a scale pit and scale house and did other construction jobs at the plant site, when their services were not required for plant operation. After the plant site had been put in first-class shape, they undertook additional street-department duties when not actually running the plant equipment.

The Barber-Greene mixing plant, being a hot-mix unit, with complete gradation control, is capable of producing mix to meet any specifications. The mix selected by Denison's Street Department for their use is Texas State Highway Department, Type "D," Fine Grade Surface Course material with a ⅝-inch maximum of crushed limestone and 5.5% of 85-100 penetration asphalt cement.

As to production, the city regularly obtains 40 tons per hour from its Barber-Greene plant, except on occasions when the crew has been caught with large stockpiles of aggregate and a heavy period of rain. With the necessity for using up these soaked stockpiles, they find their hourly production drops to about 33 tons, until a drier material is available.

Paving Operation

In handling the actual lay-down operations, the same four city trucks used to haul base gravel are used to haul mix from the plant to the Barber-Greene finisher. Added to this crew of four drivers, are the finisher operator, a roller operator, two laborers and the street superintendent, who provides general job supervision. (Final compaction after paving is accomplished by a two-wheel Galion roller.) Like the plant operators, all employees perform other tasks in the street department when they are not required for actual paving work.

Through careful planning and an informed, cooperative citizenry, the City of Denison, Texas, in addition to being known as the President's birthplace and a town with an abundant and attractive water supply, will soon be famous as a town with as fine a municipal street system as there is anywhere.

Municipal League Scholarship Established

THE South Dakota Municipal League has recently established a scholarship at the University of South Dakota to encourage student interest in careers in municipal government. The members of the University's Department of Government will award the scholarship each year to a student who, in completing his sophomore year, shows the greatest ability and aptitude in the field of municipal government. According to *South Dakota Municipalities*, official publication of the South Dakota League of Municipalities, the scholarship will provide tuition during the student's junior year.

Municipal Betterment Stimulated by Citizen Action

Members of the 1954 All-America Cities' award jury listen to a contestant describe the civil accomplishments of his community.

Front row: (*left to right*): VERNON MYERS, *New York, N. Y., publisher LOOK Magazine;* PHILIP C. EBELING, *Dayton, Ohio, former president United States Chamber of Commerce;* MRS. MAURICE HE NOUN, *Des Moines, Iowa, former president Des Moines League of Women Voters;* LEO PERLIS, *New York, N. Y., CIO national community services director;* LLOYD HALE, *regional vice-president, National Municipal League, Minneapolis, Minn.;* WILLIAM L. BRADSHAW, *Columbia, Mo., Dean, University of Missouri.*

Second row: MRS. ALBERT D. CASH, *Cincinnati, Ohio, former member of Cincinnati City Council;* MARK S. MATTHEWS, *Greenwich, Conn., author of "Guide to Community Action;"* POWELL C. GRONER, *Kansas City, Mo., former vice-president, U. S. Chamber of Commerce;* DR. GEORGE H. GALLUP, *Princeton, N. J., president National Municipal League;* MRS. RUTH R. ROACH, *Kansas City, Mo., National Federation of Business and Professional Women's Clubs;* PROFESSOR DONALD WEBSTER, Seattle, Wash., University of Washington.

Reports from the "All-America Cities" of 1954

EIGHT cities, one county, one town, and one village form the "All-America Cities" Eleven of 1954 in the contest sponsored jointly by the National Municipal League and *Look* Magazine.*

As heretofore, these annual awards are made to places where public-spirited citizens have organized with outstanding success to eliminate local evils or to bring about urgently needed civic improvements. In the current contest the awards jury had the difficult task of picking the 11 prize-winners out of 22 finalists, selected by a screening committee out of 116 entries.

The following summaries are excerpts from the statements submitted by the 11 winners when they entered the contest. (Sequence is by population—smallest first.)

DECATUR, ARKANSAS
(1950 population, 358; 1954 estimate, 400)

WHEN two years ago Decatur lost its only labor-employing business—a poultry processing plant employing 50 people—prostration threatened the town. The Decatur Development Company, with 12 members, and the Chamber of Commerce, with 50, were then formed and they have spearheaded the progress that has been made. They informed and directed the public to vote $13,000 in municipal bonds for a deep-water well, now furnishing 15,000 gallons each hour. Eighty-four thousand dollars in bonds was also voted (both issues unanimously) for obtaining natural gas. The Development Company and the Chamber of Commerce also worked to obtain the bank which was opened on August 5, 1954, with deposits of $304,000 on its first day. They established a weekly newspaper and they built a fine sales barn.

As a result of these efforts Decatur has achieved some much-needed municipal improvements and now boasts an annual labor payroll of a half million dollars.

DAVID COMPTON
Secretary-Manager, Decatur Chamber of Commerce

ROCKVILLE, MARYLAND
(1950 population, 7,800; 1954 estimate, 13,000)

A nonpartisan citizens' movement begun in 1947 has achieved the following results: made registration for voting easier; secured a public recreation program; shortened residence requirements for voting to 12 months prior to election; obtained additional registration days and polling places; and provided voting machines. In 1954 the city's political machine was voted out. Political hacks have since been replaced, the tax rate reduced for the first time in years, and labor-saving equipment has been installed. A complete review of records and procedures was instituted, and the accounting system revised. The six civic associations now operating have several thousand members; more than 300 are participating in this improvement program.

The real impetus for the forward movement came in July 1953 when the water supply failed and no answers were forthcoming as to why it occurred or how it could be corrected. The resultant citizen inquiry revealed a

* A 6-page illustrated article on The All-America Cities' awards appears in the February 8 issue of *Look* (on the newsstands January 25). See also a 4-page article in the February issue of the *National Municipal Review*.

sewage disposal crisis too. In October, November, December 1953, and January 1954, civic associations joined hands with the result that eventually a slate was chosen to run on a reform ticket, and the reform candidates were elected. Since then a new city clerk, a temporary city manager, an energetic new council, and task forces of citizens have been working on a long list of problems which previously had received no organized attention—traffic, a master plan, parks, home rule, and charter revision.

HERMAN G. HARTMAN
Citizens for Good Government

MEXICO, MISSOURI
(1950 population, 11,623; 1954 estimate 12,500)

AS a result of action of various citizens' committees, Mexico, Mo., now boasts a $500,000 new court house; the adoption of the city manager form of government; a $1,000,000 addition to the county hospital; a recreation program including parks, open-air theater, public golf course, lighted ball park and tennis courts; a $289,000 sewer bond issue; and a $982,000 school building program. These are but 6 of the 16 important forward steps taken by the city since 1946. Although many organizations have endorsed these various campaigns, no one group can claim special credit. In each campaign there were citizens' committees varying in size and with different leadership.

In the case of the recreation program, for example, an industry built the lighted ball park. Another gave the land for the public golf course. Women's clubs financed the concrete stage in the open-air theater and bought slides, swings, etc., for the playground. Civic clubs cleared brush in picnic areas, built or financed a total of 48 picnic ovens, put in shuffleboard courts, built a fishing lake and a public golf course club house, and financed individual holes on the course. In other words, the Mexico story is the story of citizen cooperation in building a better place to live.

C. R. STRIBLING
President, Missouri Military Academy

MODESTO, CALIFORNIA
(1950 population, 17,389; 1954 estimate, 35,000)

INSPIRED by the achievements of their hard-won council-manager government, the citizens of Modesto tackled an out-size fringe-area problem with vigor and determination. A committee of 21 citizens, later merged into the "Greater Modesto Committee," was subsequently so augmented by volunteers that it was dubbed the "Committee of 1,000." This group analyzed the problems of the urban fringe, recommended prompt annexation of the area, and carried on an energetic informational campaign.

Newly annexed citizens have recently been working to determine their area's needs. A 33-member Citizens Advisory Committee, composed of members of local civic groups, has been organized to advise and assist the City Planning Commission and has helped develop the city's first six-year capital improvement program. Community effort has effected completion of the Youth Center building. Citizens have helped evaluate candidates for city jobs. A sign and billboard ordinance, now used as a model by state-wide organizations, has been adopted. Fire-protection facilities have been improved. A Forward Modesto Committee has been appointed by a cross-section of the community and has reported its recommendations for the future to the City Council. On July 14, 1954 the Council, with full public support, approved an increasee in the city sales tax, with the additional funds (amounting to $300,000) earmarked for the financing of a capital improvement program geared for a city of 100,000—the anticipated population in 1965.

LAWRENCE R. ROBINSON, JR.
Forward Modesto Committee

RICHFIELD, MINNESOTA
(1950 population, 17,502; 1954 estimate, 31,756)

AROUSED citizen participation in local government, riding on a tidal wave of suburban expansion, has changed this suburb of Minneapolis from an overcrowded village with an outmoded government and antiquated facilities to a council-manager municipality with a new $2,750,000 high school, a $4,000,000 sanitary sewer system, and a road-oiling program assuring adequate streets. Incident to the change in the form of government came the elimination of part-time elected administrative officials, the hiring of all administrative personnel on the basis of qualifications, and the introduction of economies and efficient methods in procedure.

The Richfield Taxpayers Association built up a membership of 450, held mass meetings, circulated literature, and carried through the streamlining of the government and the new sewer system that came into being only after an earlier sewer proposal, judged to be ill-considered and poorly financed, had been defeated by referendum. Credit for the improvement in school facilities goes to the Citizens' Advisory Committee, a temporary group of 38, representing churches and civic associations.

LEROY TRAFTON
Village of Richfield

ROCK ISLAND, ILLINOIS
(1950 population, 48,710; 1954 estimate, 50,600)

BEGINNING with an original group of five, sparked by the League of Women Voters, more than 1,000 persons finally participated in the campaign to throw out a vice-ridden government in favor of the council-manager form. These Citizens for Good Government worked hard without pay, raised money for mailings, secured volunteer workers for the two elections, and outfought and outproduced opposition ward and precinct workers, saloon keepers, and gamblers.

As a result, the city now benefits from city employee training, comprehensive city planning, improved garbage collection, cleaner streets, improved parks and public recreation facilities, better paid employees, greater economy, reduction of vice. Adequate parking facilities and a new swimming pool are under way. And all without bond issues or increased taxes.

There is no attempt to keep up the membership of Citizens for Good Government, Inc., when there are no urgent issues. However, about 50 people, comprising the group's Board and Executive Committee, are on the alert, hold regular meetings, and see that reports on city government come to the people by press, radio, and television.

CARL A. WALDMAN
Citizens for Good Government, Inc.

WARREN, OHIO
(1950 population, 49,864; 1954 estimate, 52,400)

IN 1951 and again in 1953 the aroused citizens of Warren, led by the Warren Citizens for Good Government, succeeded in putting qualified men into key

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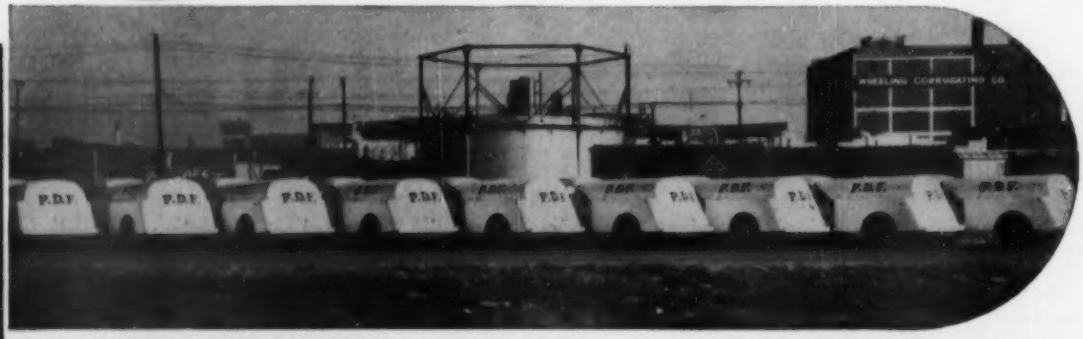

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public offices. In order to overcome crime-syndicate backing, the citizens had to hold mass meetings and advertise through all media.

After the reform candidates took office, the citizens donated their time to help unravel the mess at city hall and they worked to have their candidates elected to county offices to give the local officials the necessary backing. Volunteers watched at the polls and prevailed upon the then Secretary of State to investigate irregularities. This, in turn, led to the adoption of voting machines.

Warren now has regular garbage collection; has begun the project of removing main-line railroad tracks from the center of town; has passed a 5½ million dollar school bond issue and a five-mill city income tax to be used for cleaning sewers. It has 20 miles of new, paved and resurfaced streets, 60 corner curb cutbacks to relieve traffic congestion, 53,000 feet of new sanitary sewers, 78,000 feet of pipe added for water distribution, 2 new grade crossings, 170,000 square feet of new sidewalks, and has recently added 10 acres of land for recreation.

W. H. SHANK, JR., *Secretary*
Warren Citizens for Good Government

PUEBLO, COLORADO
(1950 population, 63,685; 1954 estimate, 80,000)

ON April 6, 1954, after repeated unsuccessful attempts to have a modern charter adopted, a council-manager charter was again submitted to the voters and approved by a vote of 8,632 to 7,093. Thus ended a long record of bad government dating back to the 1890's. The League of Women Voters, American Association of University Women, an informal "grass-roots" organization, and the local newspaper were the chief agitators for reform. Many hours of citizen time went into the preparation of the good council-manager charter that was finally carried.

RUSSELL W. RINK
City Manager

MARICOPA COUNTY, ARIZONA
(1950 population, 331,770; 1954 estimate, 440,000)

THROUGH the good offices of about 1,000 citizens, organized under the title of Better Government of Maricopa County, two of the three members of the County Board of Supervisors are now qualified men instead of the political hacks who had been running the county for years without economy or centralized control.

The association has worked within the existing political structure—that is, by electing county officials on a two-party basis. It has engaged the help of right-thinking citizens of both parties and endorsed candidates of both parties. One of the two reform supervisors is a Democrat, and one a Republican, and they form the majority that has brought about county government reform. A county manager with an adequate staff has been installed, with tremendous resulting improvement in local government.

The Better Government association does not attempt to run the county, but is unstinting in its efforts to help if called upon. It will continue to try to put good candidates on the Board of Supervisors.

LAWRENCE H. WHITLOW
Phoenix, Ariz.

NEWARK, NEW JERSEY
(1950 population, 438,776; 1954 estimate, 446,000)

IN Newark the people had lost confidence in a City Commission form of government that had proved itself to be graft-ridden, inefficient, and undemocratic. Under the leadership of the Newark Citizens Committee for Municipal Government, (an organization consisting of such local groups as the Chamber of Commerce, Council of Jewish Women, Essex Trades Council (AFL), Essex-West Hudson Industrial Union Council (CIO), Urban League, and the original founders of the Committee, the League of Women Voters) some 2,000 active participants achieved passage of a referendum for a charter study. The better government movement then went on to secure adoption of the Charter Commission's recommendation for a strong mayor-council form of government and the election of a mayor, four councilmen-at-large, and one councilman from each of five new city wards. Under the new Municipal Council an excellent Administrative Code has been adopted, and the local banks have reduced their interest rate to the city by ½%.

JANE MOYSES
League of Women Voters of Newark

CHICAGO, ILLINOIS
(1950 population, 3,620,960; 1954 estimate, 3,740,000)

A dynamic complex of citizen groups uniting more than 50,000 Chicago citizens is at work fighting the spread of slums in 56 square miles of middle-aged neighborhoods in the nation's second largest city. Here are some of the things that these citizens have accomplished in two years:

1. They researched, drew up, and lobbied two acts through the state and city legislatures that gave Chicago more power than any city in the country to preserve neighborhoods from the spread of blight.
2. Through the formation of 30 neighborhood groups (eight within the last eight months), the citizens have focused community attention on the idea of conserving and stabilizing the established values of sound but middle-aged neighborhoods.
3. Reorganized and upped the budget of the City of Chicago Building Department resulting in the hiring of 90 additional inspectors.
4. Demanded speedier prosecution of building and zoning violations with the result that a "cafeteria" court system for such violations was established.
5. Acted to take profits out of slum operation by winning approval of a plan whereby courts can appoint receivers to manage properties when owners refuse to make repairs on run down buildings.
6. Built more than 40 play-lots.

The anticipated future accomplishments include a complete revision and rewriting of the zoning regulation to give Chicago the most modern law in the country, and adoption of a housing code.

Organizations involved in this grass-roots-to-city-government fight against the threat of blight range from nonofficial groups such as the Metropolitan Housing and Planning Council, the Church Federation of Greater Chicago, the Urban League, and the Chicago Real Estate Board to such official arms of the city government as the Neighborhood Conservation Commission and Housing and Redevelopment Coordinator.

ALICE GORMAN
Public Relations Officer
Housing and Redevelopment Coordinator
Chicago, Ill.

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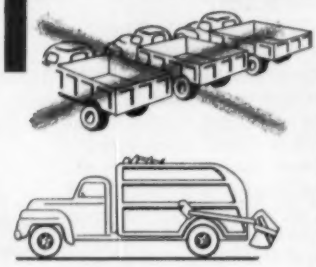
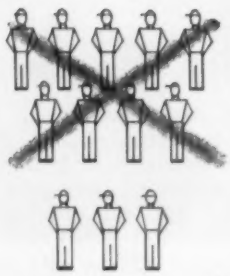


One modern enclosed Pax-all replaces 2 to 3 unsightly open trucks . . . *saves up to 70% in equipment purchase cost alone.* You'll also find Pax-all costs up to 30% less than other modern compaction-type units . . . mounts on light, maneuverable 84" C/A chassis, which saves an additional $300 per unit over larger chassis needed for other loaders.

2 Lowest operating cost



Pax-all's automatic cram-packing enables crews to collect both garbage and trash at same time — with up to *66% less labor, 50% fewer trips to dump* than open truck method. Lighter weight Pax-all chassis also assures *extra savings* in gasoline, tires, taxes, license, etc., which results in lower net cost per operating hour.

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SP-PC-5

Smog Experts Condemn Los Angeles Refuse Burning

Back-yard trash burners add to the Los Angeles smog effect and should be supplanted by modern refuse collection and disposal methods, air-pollution experts recommended

THE back-yard trash burner, used universally in the Los Angeles area to dispose of burnable trash, puts Los Angeles out of step with modern municipal sanitation. Furthermore, the burners contribute an important 10% to the oppressive smog conditions that currently beleaguer this area. That this method of disposal should be abolished was the principal conclusion of a group of air-pollution-control experts who gathered at Pasadena at the invitation of the Southern California Air Pollution Foundation.

Except for Los Angeles, no city represented at the conference permits the use of back-yard burners. The flue-fed apartment house incinerator also came in for condemnation, although it is used more commonly. Dr. Leonard Greenburg, New York City's Commissioner of Air Pollution Control, decried the construction of these incinerators as being contrary to every decent rule of mechanical design. To be tolerable, they should have a secondary chamber and a secondary burner. Nevertheless, even with these accessories, he feels that they do not meet basic air-pollution-control standards.

Report on Cincinnati

Charles W. Gruber, Cincinnati's (Ohio) chief smoke inspector, stated that his city has about 200 apartment-house and industrial incinerators, most of which give him trouble. The city has a new incinerator using the pit-and-crane design, and also makes extensive use of the large Dempster-Dumpster containers to collect refuse from markets and other locations that generate large quantities of trash. At present, the city has 129 such containers in use, and more are being added. The policy is for the industrial or business house to purchase the Dempster container, and for the city to purchase the truck with the hoisting and transporting mechanism.

Most apartment-house and other private incinerators are too small, operate at too low a temperature, and suffer from improper supervision, Mr. Gruber stated. He urged that the design of private incinerators be so improved that they cannot be operated improperly.

In Chicago, Ill., Fred Munson, assistant director of air-pollution prevention, stated that the fire-fed apartment-house incinerator is no longer approved, and added that the city certainly would not tolerate back-yard burning.

Report on Philadelphia

Abraham Michaels, chief of refuse disposal, of Philadelphia, Pa., described in detail the incinerator-construction program currently under way in his city. The most distinctive feature of the design is the large combustion chambers and flues, and the water sprays that remove the fly ash.

The furnaces and the fly-ash-removal equipment are products of the Nichols Engineering and Research Corp., of New York, N. Y. The spray-chamber system will require 1 gallon of water per minute per ton of refuse burned, and will reduce the solids in the flue gas to a less than 0.85 of a pound per 1,000 pounds of gas discharged, adjusted to 12% carbon dioxide content.

Ben Linsky, chief smoke inspector of Detroit, Mich., also criticized the practice of back-yard trash burning. At one time, many people in Detroit burned refuse in 50-gallon drums. However, the city prohibited the practice and confiscated 9,800 drums. It was found that only 50 people complained.

A Visitor Speaks

The danger of back-yard burning of refuse was further underscored by W. S. Foster, engineering editor of THE AMERICAN CITY. Mr. Foster, appearing as the banquet speaker, pointed out that the peculiar terrain of the Los Angeles mountain-ringed basin is well known to the technical field. All have studied the way it traps the atmosphere during periods of inversion.

He added that the 10% of pollution added by the back-yard burners may easily represent an important contribution. The present smog conditions may be dissipated if the air pollution were reduced by 50% or even 30%, so that the portion contributed by back-yard burning would be an important accomplishment. He also cited research in England, pointing out that chemical pollutants in the air become more aggressive if solid particles are in the air, also. He recommended closer control over ex-

Grandpa thought he was saving money...

"Yes, dear, 25 years ago grandpa was on the Water Board when they ran the pipe line out Madison Street to Western Heights. Grandpa and the other members voted to buy a substitute for cast iron pipe—they thought they were saving money. Now this pipe has failed entirely after years of expensive maintenance caused by breaks and leaks.

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isting incinerators and outlined certain standards that he believed would be a guide in measuring their adequacy.

Incinerator design and operation came in for detailed analysis. Most thought-provoking was the suggestion by R. C. Corey, of the U. S. Bureau of Mines, that the furnace volume and combustion chamber be combined into a single cell. This proposal did not meet with much support from the engineers present.

The sanitary landfill also was examined closely, as was the proposal by Professor H. B. Gotaas, of the University of California, that composting be considered, using in particular the ridge-and-furrow method that he has studied in detail. Warren Schneider, director of sanitation for Los Angeles, doubted the practicability of the method, since the fertilizer industry was already offering more products for sale than the market in this area demanded.

The meeting concluded with the agreement urging the abolition of back-yard incinerators and the suggestion that an engineering study be made of refuse-collection and disposal methods that would be compatible with air-pollution standards in the Los Angeles basin area.

Civil Defense Exercises For N. Y. State Counties and Small Cities

A NOVEL civil defense training program has been planned for county and small-city areas in New York State for 1955. The program calls for outlying areas and smaller cities to be the subjects of mock atomic attacks while the major central cities become the support zones for the "devastated" areas.

According to Lieutentant General C. R. Huebner, Director of the New York State Civil Defense Commission, tests involving this approach will give the populations of the outlying areas a clearer understanding of civil defense activities. Outlying populations, he believes, must understand their increased CD responsibilities now that the H-bomb has greatly expanded the area of possible destruction.

Use of this technique will carry forward the state civil defense program of staging training exercises in areas throughout the state. Since May 1951, each of 11 "target" cities in New York have conducted three-day training programs. These ranged from planning sessions to public participation in an alert and the physical demonstration of local CD forces in action.

Public Housing Friends and Foes Reach Agreement

AGREEMENT was recently reached by Syracuse (N. Y.) advocates of public housing and their opponents on a proposal for housing low-income families under public auspices.

At a meeting of the Mayor's Redevelopment Committee, the members split over a proposal for a new public housing project of a conventional type. However, all the members—including such traditional opponents of public housing as a homebuilder and a real estate man—reached unanimous agreement on the following scheme:

(a) Purchase and rehabilitation of existing dwellings within designated Conservation Areas, and their operation under public auspices for occupancy by low-income families —particularly large families in immediate need of adequate accommodations.

(b) Purchase of dilapidated structures for demolition, and eventual resale of the land for some appropriate use.

NOW! REAL ECONOMY FOR YOUR SHADE TREE PROTECTION PROGRAM

BIG CAPACITY MIST SPRAYING IN A COMPACT NEW UNIT

the John BEAN ROTOMIST "75"

The new Rotomist "75" gives you the greatest "rate of work" capacity ever developed in a mist sprayer of its size — 19,000 cu. ft. of air per minute to put more spray where it's needed in a day's operation. You cut spraying time and labor costs, yet do a better job. Thorough coverage, dense foliage penetration and a minimum waste of spray materials are achieved — true high pressure spray delivery at 400 PSI, exclusive axial flow fan and straight-through air flow do the trick.*

Operators like the easy handling of the Rotomist "75." Smooth 360-degree rotation within a 46-inch swing radius and 110-degree vertical pivoting is the result of perfect counter-balancing. And you'll like the low maintenance costs over years of steady use. The compact unit has a 75-gallon supply tank and is powered by a 25 H.P. engine. The completely enclosed Royalette pump has sapphire-hard cylinders that last a lifetime, even with concentrates. An exclusive right angle gear transmission between clutch and fan is also fully enclosed and oil-bath lubricated — one of many construction features that mean trouble-free operation.

*Write us about another use for Rotomist — leaf windrowing.

Both the "75" and the larger capacity Rotomist "100" (shown at right) come in trailer-mounted as well as truck-mounted models. Get full details today.

Write for new 1955 Rotomist Catalog

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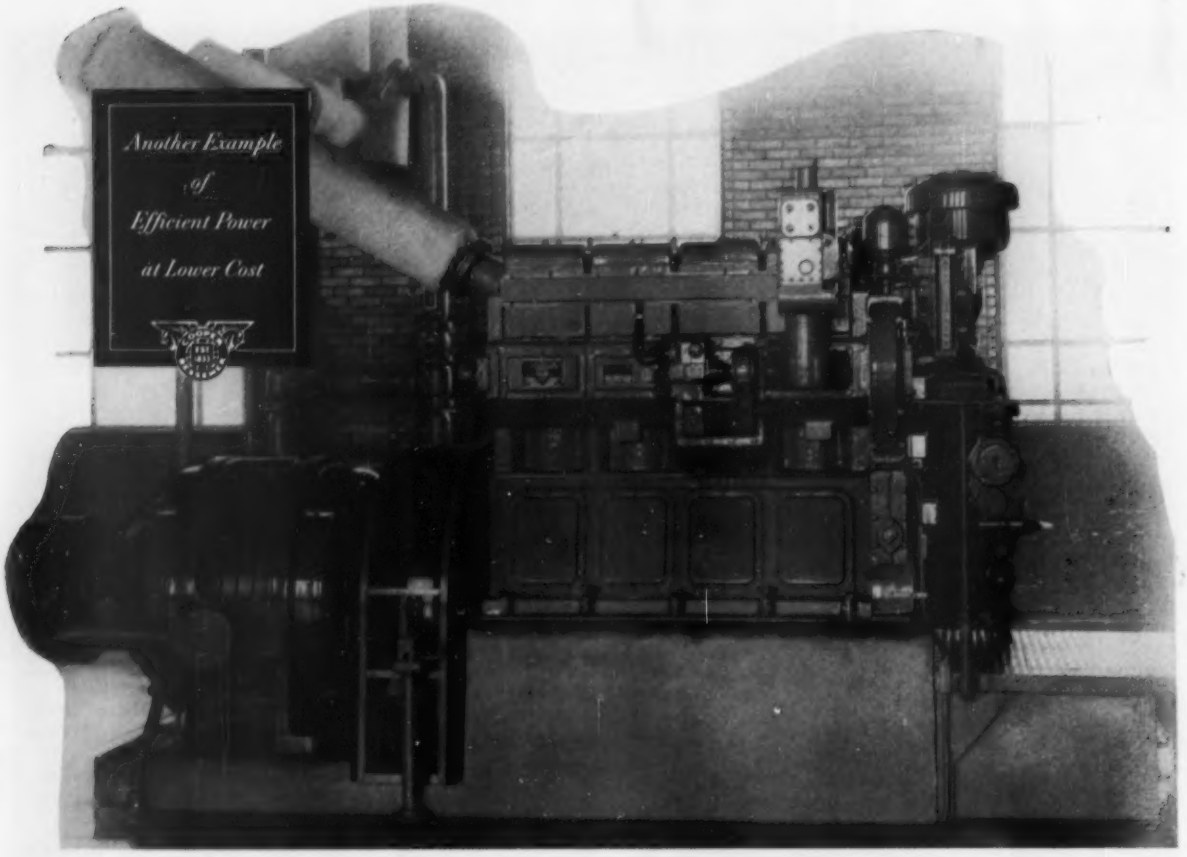
Division of Food Machinery and Chemical Corporation



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at Baltimore's Patapsco Sewage Plant

INSTALLED in 1940, the reliable 120 hp Cooper-Bessemer gas engine in Baltimore's Patapsco Plant has paid for itself several times over. Fueled by waste sludge gas, and powering generators and pumps, this unit saves Baltimore $5,000 a year in electric power costs.

Generating an average of 800 kw-hr per day, this compact Cooper-Bessemer unit has provided typical trouble-free performance with a minimum of maintenance and attention. Only one man is needed to handle engine operation, as well as attending sewage pumps, sewage screens, meters and other plant equipment.

Whatever your future powering plans may require — gas engines, diesels, Gas-Diesels — remember that Cooper-Bessemer offers the most advanced, money-saving features. Today, why not check with our nearest office for detailed information on meeting power requirements at lower operating cost and increased operating efficiency.

At the Patapsco Sewage-Treatment Works, a sturdy 120 hp Cooper-Bessemer gas engine drives a 75-kw generator used in the processing of wastes and sewage.

MOUNT VERNON, OHIO

COOPER-BESSEMER

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Modern Water Rates

PART X

Devices used to encourage habits of prompt payment

THE persuasion of the water user to part with his hard-earned cash in return for the water service he receives is a delicate art, requiring firmness tempered with diplomacy. Yet it must be mastered if the water works is to thrive. The practice of reducing the size of the bill to encourage the user to pay promptly is one of its facets.

This procedure of discounting of bills is not widespread. Of the 90 water rates published thus far in the current series, only 31 utilize it. A differential of 10%, favoring the man who pays promptly, seems most popular, and is used by 18 of the 31. A 5% differential is next, used by seven. Of the remainder, one uses 20%; one, 15%; one, 1%; one, a flat penalty charge of $1; and two, turn-on charges of $1 and $3.

The water-works man can easily justify the excess charge. His accounting department must incur extra expense to collect payments from delinquent users, and he does not believe it fair to make prompt payers shoulder this expense. More important, since the practice stimulates prompt collections, it makes the billing procedure less expensive.

However, drawbacks do exist. The discount complicates the bill, presenting another opportunity for errors. And it runs the risk of arousing public resentment. Of the water rates in the 31 cities having the prompt-payment differential, only one is privately owned. Electric and telephone utilities rarely use this method, probably because they have become extremely sensitive to public criticism and strive to avoid it at all costs.

The water rates using the practice either discount the bill if it is paid promptly, or assess a penalty if the user delays payment. For all practical purposes, both methods mean the same, and both penalize the late payer. The discount, however, is more diplomatic. Nevertheless, the water-works manager knows that his discounted rate is actually his true rate upon which he must calculate his income.

Of the 31 water rates mentioned, 18 add a penalty charge for late payment; seven discount the bill when paid promptly; three provide both a discount if paid promptly and a penalty if paid late; one provides two rates, one for prompt payment and the other, about 10% higher, for slow; and two add a turn-on service charge, presumably to pay for the service man who shuts off the water.

The cities whose rates use this method fall into no special classification. They range from Chicago, population 4,300,000 (5% discount), to Brookshire, Texas, population 1,000 ($1 penalty). They are scattered from Bellows Falls, Vt. (10% penalty), to La Mesa, Calif. (5% penalty). The largest differential occurs in the rate charged by Canton, Ohio (10% discount for promptness plus 10% penalty for delay). The smallest is Peekskill, N. Y. (1% penalty).

As has been pointed out, those cities using these discount or penalty charges find them helpful in clearing the accounts quickly. Others recognize that they create some public resentment and implant a note of suspicion that favoritism enters into the billing procedure. Consequently, one should recognize this practice for what it is: a means of encouraging prompt payments, in case the water works is troubled by delinquent accounts.

ELMIRA, N. Y.

Rates

Volume of Water (in cubic feet)	*Metered Charges* (per 100 cubic feet) In City	Outside City
First 1,000	$0.35	$0.50
Next 4,000	.25	.35
" 10,000	.15	.20
Excess	.09	.11

Fire-Protection Rates

Public, per hydrant, annually . $50 (outside city only)

Private (inch-service)	Per Quarter In City	Outside City
3	$5.00	$7.00
4	10.00	12.00
6	15.00	18.00
8	20.00	24.00
10	25.00	30.00

Miscellaneous Regulations

1. Bills are rendered monthly where water use exceeds 60,000 cubic feet per quarter.
2. A 10% discount will be allowed on all bills for metered service paid within the specified discount period.
3. Air conditioning units restricted to 5 hp because of sewer restrictions.
4. Sodium silicofluoride is added as a dental health measure.

General Data

Population served	70,000
Services (100% metered)	16,558
Hydrants	905
Valves	2,800
Miles of mains	182
Supply—river and impounding reservoir	
Treatment—rapid sand filter	
Storage facilities—open reservoir, 5,000,000 gallons; covered reservoir, 2,000,000 gallons	
Average demand	7 mgd
Plant capacity	12 mgd

Typical Costs Per Quarter

(not discounted)

Gallons	*Cubic Feet*	*Costs*
9,000	1,200	$4.00
15,000	2,000	6.00
30,000	4,000	11.00

Remarks

1. Water department furnishes service free to other city activities only.
2. Department owns all meters; places them in the building occupied by the user.
3. Bills are processed on Underwood equipment.
4. Present rates went into effect October 1953 and represent a 30% rise.

JOHN COPLEY
General Manager

NEBRASKA CITY, NEBR.

Rates Bimonthly*†

(based on volume of water per day)

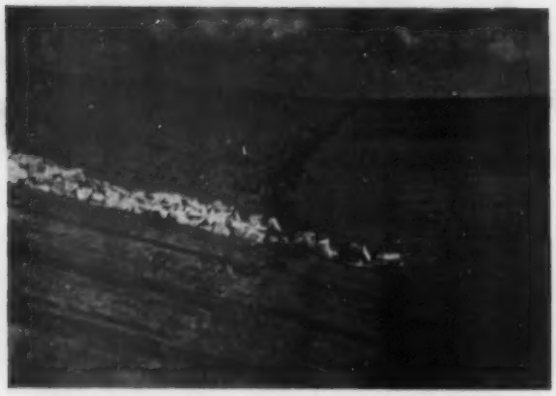
Volume of Water (gallons per day)	*Metered Charges* (per 1,000 gallons)
First 1,000	$0.525
Next 2,000	.30
" 2,000	.25
" 2,000	.20
" 3,000	.15
" 40,000	.125
Excess	.095

* Minimum bill is 75 cents per month per meter.
† 5% discount on bills paid within 10 days.

General Data

Population served	7,889
Services (100% metered)	2,991
Hydrants	169
Supply—river	
Treatment—alum, lime, sodium silicate, fluorides	
Storage facilities—open reservoir, 3,000,000 gallons	
Average demand	0.9 mgd
Plant capacity	2.2 mgd

(Continued on page 169)



Wind and wave action erode banks of rivers and reservoirs.

A sheet-lined canal, one of Mexico's reclamation projects.

Leakproof Water Reservoir

An asphalt blanket checks water seepage and demonstrates adaptability to other uses

WATER supply is a serious affair to the 30,000 residents of Odessa, Texas, and to the Colorado River Municipal Water District that supplies the city with water. Therefore, when instructing its consulting engineers to design a new reservoir, the District specified that it must be leakproof. To positively check seepage, the consulting engineers, Freese and Nichols, of Fort Worth, adopted an unusual construction method, one that is gaining favor, particularly in the Southwest and in Mexico.

The reservoir was sealed by a barrier constructed of a set of asphalt sheets, placed side by side directly over the earth floor and walls, and joined with a 6-inch-wide covering strip. Hot asphalt mastic created the initial bond and was followed by an application of cold sealing mastic. The sheets cover the entire floor of the reservoir, which measures 730 feet in length and 630 feet in width, and the 42-foot-high side walls. The entire membrane lining is covered with a 3-inch layer of soil cement.

Linings

The linings are made of 80% special formulation asphalts and 20% fiber content, which are selected for strength. The sheet is encased between saturated felt sheets, which are built to endure extremes of weathering and field conditions. A sheet, 12 feet long and 3 feet wide, weighs close to 100 pounds. Sheets are generally cut to a specified length at the factory to assist in field

(Top) Odessa places a protective asphalt blanket to halt erosion, and at the same time prevent seepage. (Center) The 12-foot by 3-foot sheets weigh about 100 pounds and are factory cut to facilitate field handling. (Bottom) Foot pressure along the sealed joint bonds the two sheets.

cut to a specified length at the factory to assist in field handling; in this case, 13½ feet. They can be butted together and covered with a 6-inch-wide strip, or lapped at the sides and ends. The Odessa reservoir utilized the butt-and-strip method.

The soil-cement interior lining that covered the asphalt mats is mixed to the consistency of plaster, then spread and screeded to the proper thickness by hand. This type of mix requires a greater cement content than the standard soil cement compacted by sheep's-foot and pneumatic-tired rollers.

The water content of a plastic mix is necessarily high —above the optimum moisture content—and this causes a high incidence of shrinkage cracks. Trial batches of the plastic mix, placed under field conditions, showed that it would be acceptable on the bottom of the reservoir but would probably have to be revised to be safe for use on the slopes. The soil available on the site was a sand containing about 15% silt and clay. On the side slopes, "scalpings" or screenings from a limestone rock-crushing plant were substituted for the soil.

Use of Sheets

The asphalt blankets have been successfully used in many places to halt seepage under difficult conditions. The Valsequillo Canal, near Puebla, Mexico, is lined with the sheets for protection of the canal; and at Chetumal, Mexico, the sheets are used to seal the sides and the floor of the city's water reservoir. The Bureau of Reclamation has laid these sheets to halt seepage and erosion in the canal near Grand Junction, Colo., and to protect an irrigation project near Yuma, Ariz.

The linings are brand-named Gulf-Seal, and are manufactured by the Gulf Seal Corporation, a division of the Gulf States Asphalt Company, of South Houston, Texas.

*Typical Paragraphs from "How to Meet the Public"**

What's the Most Becoming Thing You Can Wear? . . .

The answer is A PLEASANT SMILE! The person behind such a smile has a big advantage. For a smile not only lights up your face, it reacts inside of you . . . actually helps you to be pleasant and good-natured. Best of all, a smile is infectious. It wins smiles in return and makes others want to do what you ask them or feel confidence in what you say. Within any organization a smile aids efficiency. And in dealing with a taxpayer, a pleasant smile is truly *Public Relations Improver No. 1.* Try it and see for yourself.

Courtesy Is Contagious

Graciousness grows. A cheery greeting often passes from one person to another and another. If you assist someone with a heavy door or an overload of parcels, chances are that person will pass his gratitude along in good will toward others. The courteous way of action is the pleasantest way, for courtesy is returned and expanded manyfold.

The Helping Hand . . .

Be sympathetic and helpful to the employee who has

* See page 189 of this issue.

(Continued on page 200)

BEAT YOUR MAINTENANCE COSTS with GRACE "EZ-ON" TRAFFIC SIGN FACES

IN THE NEW RED or YELLOW

GIVE SAME SERVICE AT THE ORDINARY COST! 1/2

You save real money, about half... if you use 'EZ-ON' Faces that slip on right over your present signs. Same high quality and they're reflectorized. In quantities AS LOW AS... $2.80 EACH

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Now in the new RED (or Yellow as you may prefer), 'EZ-ON' Faces restore your old, defaced signs on location in less than 5 minutes! NO EXPENSIVE EQUIPMENT NECESSARY. Save time, save labor costs. Your maintenance problem is thereby solved!

THEY FIT OVER PRESENT SIGN
ATTACH IN LESS THAN 5 MINUTES!

1. Slip 'EZ-ON' Faces over old sign. Note wide flanges.
2. Then bend flanges backward holding 'EZ-ON' Face in place.
3. Use special Crimping tool to clamp flange and secure sign.

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They're made of 30 ga. steel and in 2 shapes and 2 sizes, as shown above. Any standard copy..warning or regulatory or your own copy... as you may prefer. 'EZ-ON' Faces are solving the maintenance problem in many states and cities throughout the nation. Why not in yours?

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stop electricity

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Adlake relays require *no* maintenance whatever... are quiet and chatterless... free from explosion hazard... dust, dirt, moisture and temperature changes can't affect their operation. Mercury-to-mercury contact gives ideal snap action, with no burning, pitting or sticking. Time delay characteristics are fixed and non-adjustable.

Adlake

The Adams & Westlake Company

Elkhart, Indiana

Traffic Control Is Moving from Palliatives to Specifics

A NEW ERA is dawning in traffic control and facilitation. Trial and error is being replaced by definite successful measures.

A sign of the fading of the old era is less assurance shown in urging, designing, and constructing traffic-carriers known as radials, which are aimed like arrows at the heart of the city. It has always been known that these broad highways caused congestion by pouring cars into the business district. It was thought necessary, and that the cure was to provide parking space as close to the busy main streets as possible. This is still the practice in many cities where traffic congestion is not an urgent problem. In fact, wherever this practice is defended, there is no *real* traffic congestion; if there were, the practice would not be tolerated.

Properly Located Parking

Proper location of parking areas is the first essential in providing adequate parking facilities combined with minimum street congestion. This is a universal law.

Other parking factors, of course, are size and type of facility, ease of access and exit, method of collecting fees for least delay. All these are local details. Where space is scarce and expensive, vertical parking is now feasible. There are the familiar ramp garages, the semi-automatic pigeon-hole type and the Bowser type, the operatorless automatic Aikro and the Park-O-Mat systems.*

Commuter travel is, of course, congestion going to town. It is authentic and universal congestion, for it is plainly a flood of cars occurring at given periods of the day. In the smaller cities where commuters and other long-time parkers are permitted close to or within the business district, entrance and egress should not be from and to main business streets. In the big cities this long-time parking should be (1) at transit stations, (2) at parkports alongside the highway loop or loops encircling the business district, with frequent transit service to and from the business district.

Basic Idea in Traffic Control

The modern, basic idea in traffic control is to provide a loop of connecting streets around the business district to shunt through traffic and then, as far as possible, to locate all long-time parking alongside this loop. How do the cities and traffic consultants view this simple plan? Do they subscribe to it or do most of them still believe that highways, superhighways, and freeways should tear through the downtown?

The *Municipal Index* asked the traffic engineers in cities with populations over 50,000 what they and their cities thought about a loop or encircling freeway to strain vehicles on to those streets and highways that will take them to their destinations. The questions were:

Have your city authorities and leaders given consideration to providing a loop around your city's business district?

"Yes," said the traffic engineers of Abilene, Texas; Atlanta, Ga.; Bloomington, Ind.; Buffalo, N. Y.; Cincinnati, Ohio; Dallas, Texas; Decatur, Ill.; Denver, Colo.; Evansville, Ind.; Flint, and Grand Rapids, Mich.; Houston, Texas; Jackson, Miss.; Jacksonville, Fla.; Kankakee, Ill.; Montgomery, Ala.; Portland (Maine and Ore.); Providence, R. I.; Rome, N. Y.; San Antonio, Texas; San Diego and San Jose, Calif.; Tacoma, Wash.; Tucson, Ariz.; and Wichita, Kans.

"We are talking about a loop around the business district," said the Traffic Engineers of Enid, Okla.; Ithaca, N. Y.; Richmond, Va.; and Riverside, Calif.

In your opinion, would it be possible to designate a system of streets which would provide a loop around the business district?

All the cities replying said "yes," except Bloomington, Dallas, Houston, Ithaca, Kankakee, Montgomery, Providence, Richmond, Tacoma, Tucson, and Wichita, who said, "not with existing streets." It is important from an economy point of view that so many cities (19) found they could use existing streets to provide a loop around the business district.

As long-time parking is the cause of rush-hour congestion, has consideration been given to moving out of the business district all the long-time off-street parking facilities possible?

All the cities replying said "yes," except Abilene, Denver, Houston, Jackson, Kankakee, Richmond, and San Antonio.

ABILENE, KANS., feels that removing long-time parking from the business district is desirable and feasible "from the standpoint of traffic control but not from the economic and social standpoint."

BLOOMINGTON, IND., reports that this measure has already been taken. BUFFALO, N. Y., says yes, not so successful yet. CINCINNATI, OHIO, reports that the removal of long-time parking from the business district is recommended as part of the city plan because parking space here should be for short-time shopping and business parking. ITHACA, N. Y., says the same for municipal lots. PORTLAND, MAINE, says it has been done as far as possible but efforts to prohibit parking are being resisted.

ENID, OKLA., expects to change 2-hour metered parking to 1 hour and half hour. RIVERSIDE, CALIF., now has 1-hour and 2-hour limits in the business district. TACOMA, WASH., reports that most of the off-street space is located at the fringe.

DALLAS, TEXAS, says "this would be desirable but the city

* Vertical parking is discussed commercially in a 12-page brochure "Auto Parking," available without cost from Charles W. Lerch & Associates, 1172 Board of Trade Bldg., Chicago 4, Ill.

IN SHAKER HEIGHTS, OHIO, people park free and ride quickly and comfortably to downtown Cleveland in high-speed transit vehicles running on a private right-of-way. Residents of this fashionable residential area *prefer* transit.

In the next six years . . .

18,000,000 MORE CARS TO PARK

Today, much time, effort and money is being spent on parking lots, freeways and wider streets. These things help ease traffic congestion, but are not enough. In view of the 18,000,000 more cars due on the road by 1960, more effective measures must be taken.

Traffic congestion will be virtually eliminated when public transit is faster and more convenient than the private automobile. Sound city planning can make this possible. For example, when a freeway is built, a center mall should be included for transit vehicles. They can then speed along unhampered by other traffic. This swift movement is in the direct interest of the entire community. Efficient public transportation is the key to ending traffic congestion. General Electric Co., Schenectady, New York. 107-21 A

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lacks the power. It may be feasible after the loop around the business district has been completed. The east section of the loop has been built and the south section is under construction."

PORTLAND, ORE., and PROVIDENCE, R. I., say they have no present control over private lots. SAN ANTONIO, TEXAS, and SAN DIEGO, CALIF., say the idea is desirable but its feasibility is questionable. RICHMOND, VA., says the same, and adds that fringe lots and shuttle transit service is not feasible in metropolitan areas under 500,000.

HOUSTON, TEXAS, does not accept long-time parking as the major cause of local rush-hour congestion.

["Since 1946 some 7,600 garage spaces have been provided mostly for long-time parkers, as well as numerous parking lots. Within the central district 16,000 off-street spaces are available mostly for the all-day parker. The city is without authority to regulate parking facilities and, as long as all-day parkers are willing to pay sufficient charges to make attractive the investment in off-street facilities, we suspect that they will continue to be built."]

WICHITA, KANS., says "moving long-time parking from the business district is desirable. There is room for some long-time parking on the fringe within walking distance, and some long-time parkers are using a shuttle bus from a free lot."

GRAND RAPIDS, MICH., says: "where parking is still permitted on streets in the business district, the meter rate is five cents for one-half hour. It is not feasible to remove long-time parking from off-street areas where the demand is not strong."

In cities that have not acquired or exerted control of parking, palliatives will continue to be applied until such time as traffic congestion becomes more than a debating problem.

City officials—and county, state, and federal officials—should scan with a calculating eye any plan or suggestion that contemplates stabbing the business district with "radials" or "arterials," or with plain highways bringing more long-time parking to the business district. When told that employees, workers, and shoppers will not come to a fine business district unless they can park in its center, these officials should consult their own judgment, obtain modern advice and see what progressive cities are actually doing profitably. Says Roger W. Babson, business analyst, "Within five or ten years no parking of private autos will be permitted within a mile of downtown."

Better Business Districts

The larger cities are to be congratulated on the possession of so many traffic engineers who understand and accept—and to understand is to accept eagerly—the plan first promulgated in the 1953 *Municipal Index*. Proper application of the loop with its parkports and transit service in the big cities can eventually do much more for the city than reduce congestion. It can be the incentive step to the creation of an incalculably more attractive business district. The plan closes with this paragraph:

Having fewer automobiles invading the business district, far from causing a blight or depression, will permit the central area to tower above its former drabness and confusion. Freed of the necessity to provide parking space for more and more cars, skyscrapers can rise again without being decried a serious traffic-generator. With the main business streets crowded with people and not with cars, there will be room for pleasant shopping and public enjoyment. The scale on which these activities can be satisfied will be shown by merchants, hotel proprietors, restaurant and nightclub operators, impresarios and theatrical producers. Then the central business district need fear no outlying competition and values will be maintained.

This advantage has been glimpsed by the City Planning Commission of Buffalo, N. Y. On September 24, 1954, a proposal was sent to the Common Council "for rejuvenating this city's central business core." The project calls for the construction of a landscaped pedestrian concourse in the heart of downtown Buffalo. It is briefly described by its designer, Planning Director A. Russell Tryon:

Based on the premise that traffic blight is the principal source of downtown deterioration, the Commission's proposal recommends:

1. Higher priority for public transit vehicles in the downtown area.
2. Adequate off-street parking (all-day and short-time) around the central core.
3. Bold, imaginative changes in the existing downtown traffic pattern.

Pointing out that "every person in downtown must become a pedestrian before he can become a customer or worker," the plan proposes transforming Main Street between Mohawk and Eagle and Court Street between Pearl and Washington into a garden-like patio in order to encourage free movement of shoppers between stores. This would mean prohibiting all vehicular traffic——except public transit for which special underground terminal facilities would be provided.

The project will be described by Daniel J. McKenzie, Chairman of the Buffalo City Planning Commission, in the March issue of THE AMERICAN CITY.

Mass Transit Must Be Fast

By CLARENCE A. WINDER, *Mayor*
Pasadena, Calif.

MUCH OF THE MONEY that has been poured into the construction of freeways in metropolitan areas has been of no help in the elimination of congestion. In fact, in many cases the effect has been just the opposite.

On this point your attention is directed to two interesting statements in the report of the Industrial Survey Associates to the City Council of San Diego, *Transportation for San Diego:*

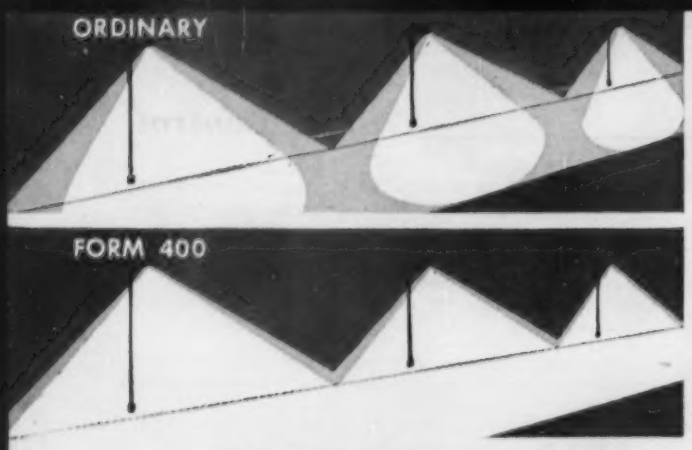
1. Highway improvements between large cities less than 150 miles apart usually increase traffic volume greatly, resulting in more rather than less congestion unless large capacity is provided for.
2. Improved highways between a metropolitan center and its suburbs draw out more people than they bring in.

The interests which so loudly hailed the freeways as the salvation of the central business districts will be, I am sure, the first to admit that the reverse is true and that we may see decentralization as the ultimate result of intermetropolitan freeways. It must be obvious that freeways, standing alone, do not represent any solution to the traffic problem of our great metropolitan areas unless effective and efficient mass transit is also provided.

For the purpose of simplification, let's say we are talking about two types of mass transit: (1) the use of a modern bus on a modern street or highway, which is the only proposal of this kind before us; and (2) rapid rail transit, whether it be on the surface, in a subway, on a depressed right-of-way, or an overhead monorail. To say that rapid rail transportation is dead and that buses provide the total solution, is to close our eyes to the facts.

The defeatist attitude that has possessed the management of our local transit systems for the past decade bears no resemblance to the usual American industrial-

(*Continued on page 154*)



BETTER LIGHT CONTROL by the new Form 400 improves over-all visibility. Bright spots under the luminaire and dark areas near the edge of the beam are minimized to achieve greater uniformity of pavement brightness.

NEW EASE OF SERVICING of the new Form 400 speeds up maintenance and lowers costs. Glassware is hinged to provide full accessibility. Both glassware and the internal reflector are removable without the use of tools.

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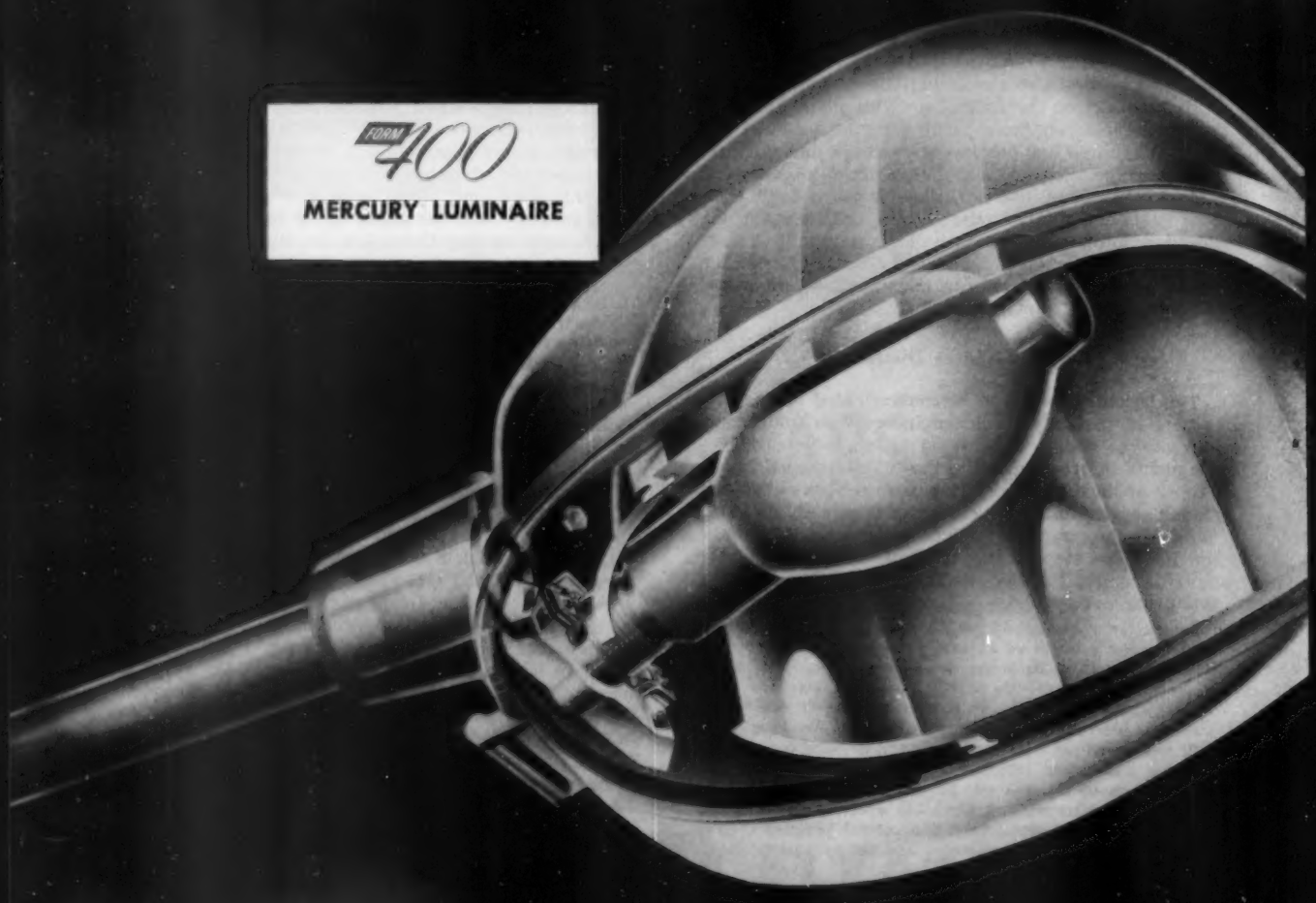
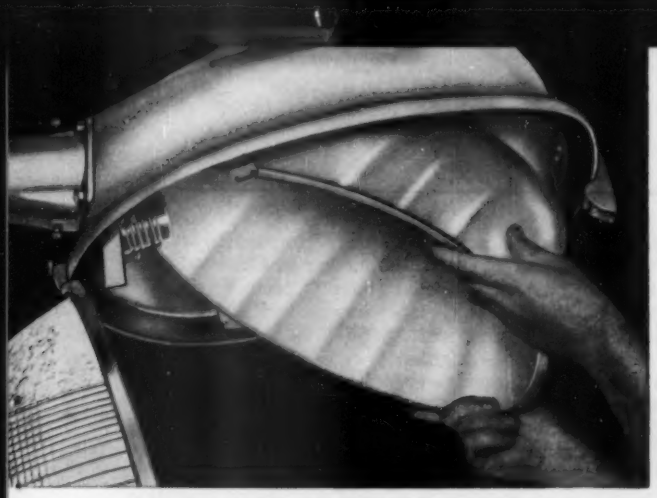
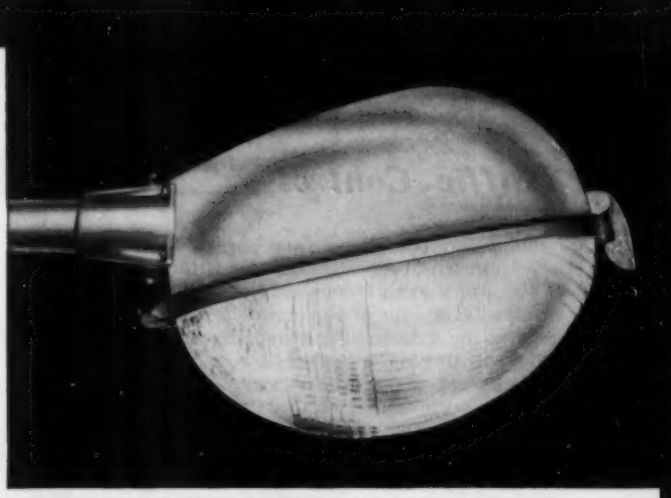
FORM 400
MERCURY LUMINAIRE





GREATER FLEXIBILITY of the new Form 400 gives you either Type II or Type III distribution by changing snap-in reflectors. Five different mercury lamps may be used, and you can choose sockets for either multiple or series circuits.



NEW MODERN APPEARANCE of the Form 400 is highlighted by its distinctive new tilted design. The functional design of the Form 400 adds a handsome, progressive appearance to any community where it is installed.

New FORM 400 Luminaire

Better light control, greater flexibility, and easier servicing are features of new luminaire.

General Electric's handsome new Form 400 luminaire marks a major step forward in mercury street lighting. Optically, the Form 400 provides materially improved over-all visibility by combining unequalled uniformity of pavement brightness with a new high in utilization.

NEW EASE OF SERVICING—The glassware assembly of the new Form 400 is hinged to hang open a full 90° and thus provide complete accessibility for relamping and cleaning. The glassware will not come off accidentally, but it can be easily removed by lifting it off the "pick-off" hinge. Two stationary clamps and a spring clip firmly position the reflector, yet allow its removal without using tools.

GREATER FLEXIBILITY of the new Form 400 makes possible new operating economies. Snap-in reflectors for either Type II or Type III distribution are interchangeable. Since both use the same glassware, stocking of replacements is simplified. Five different mercury lamps can be used. Besides a conventional multiple socket for use on ballasted circuits, an entirely new series socket for Ballastless Mercury is also available.

FULL INFORMATION on the new General Electric Form 400 mercury luminaire is told in an attractive new bulletin, GEA-6241. Contact your nearest General Electric Apparatus Sales Office, or write Section 452-152, Outdoor Lighting Dept., General Electric Co., West Lynn 3, Mass.

Progress Is Our Most Important Product

GENERAL ELECTRIC

(Continued from page 151)

ist's approach to a problem of this nature. The records of our utility commissions are clogged with requests by each and every one of our privately managed industrial systems for a continuing abandonment of rail systems and a substitution, in part, of bus transportation, often misconstrued as "mass transportation."

There is a question as to whether or not any form of transportation when intermingled with automobiles and trucks can be classified as "rapid transit." Yet most of the right-of-ways throughout our metropolitan areas, set aside solely for rapid mass transit, have been abandoned. The result is that the portion of the traffic which moved over a free right-of-way is now intermingled with our already overcrowded other forms of transportation.

The continued use of mass transit, intermingled with all other forms of transportation, means that loading and unloading will increase downtown congestion.

Rapid transit cannot be superimposed on any highway mixed with other forms of transportation. Unless mass transit is carried at a speed far in excess of any form of transportation now generally accepted on our highways, it will not contribute in any helpful way to the solution of our general traffic problem.

Jacking Bent Posts In Elmwood Park, Ill.

STRAIGHTENING parking-meter posts that have been damaged by automobile accidents and by delivery trucks servicing stores is a troublesome chore in many cities operating meters. With over a million meters on the streets of our cities, there are over 100,000 of these straightening jobs to be performed in a year.

We have 252 Dual parking meters in Elmwood Park, Ill., and have to straighten about 30 posts a year. We found that makeshift jack arrangements were time-consuming projects and, therefore, costly. The Star Parking Meter Straightener made by the Star Jack Company, 420 Lexington Ave., New York, N. Y., proved to answer our need.

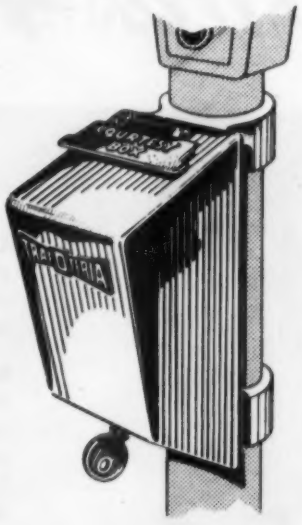
We selected the Star Straightener because of its 25-inch hydraulic ram travel and rapid set-up hitch operation. Another advantage is light weight and extreme portability. The result is a fast straightening operation.

Cost records have not as yet been compiled, but we are conservative in saying that the new method is at least three times faster. Actually, our men do this work so much more quickly now that we hardly consider it worth while figuring costs.

HAROLD A. OLSON
Village Manager

A bent meter post is straightened with portable Star jack.

Easy Method Gets More Fines Paid



ANY town that provides parking—and they all do—is right in the middle of public relations with both taxpayers and visitors. No violations are more common than those surrounding parking. Consequently, anything that eases the payment of fines for over-parking contributes to better public relations.

Traf-O-Teria System, Inc., of El Dorado, Kans., is accomplishing this in quite a number of cities. It is a simple method of collecting fines right at the spot. Over 20 cities report that the percentage of over-parking penalties collected by this system runs from 70% to 99% compared with 20% to 80% before the system was installed.

Facsimiles of the replies from these cities are given in a report available to city officials on their request to Traf-O-Teria System, Inc. A good average response showed 65% to 75% of fines collected by the previous conventional method as compared to 90% with the Traf-O-Teria System. The before and after percentages of fines collected in towns apparently not too accustomed to paying fines were impressive: 20% before Traf-O-Teria System was initiated, 70% with the System; 25% before, 75% after; 38% before, 92% after; 40% before, 75% after.

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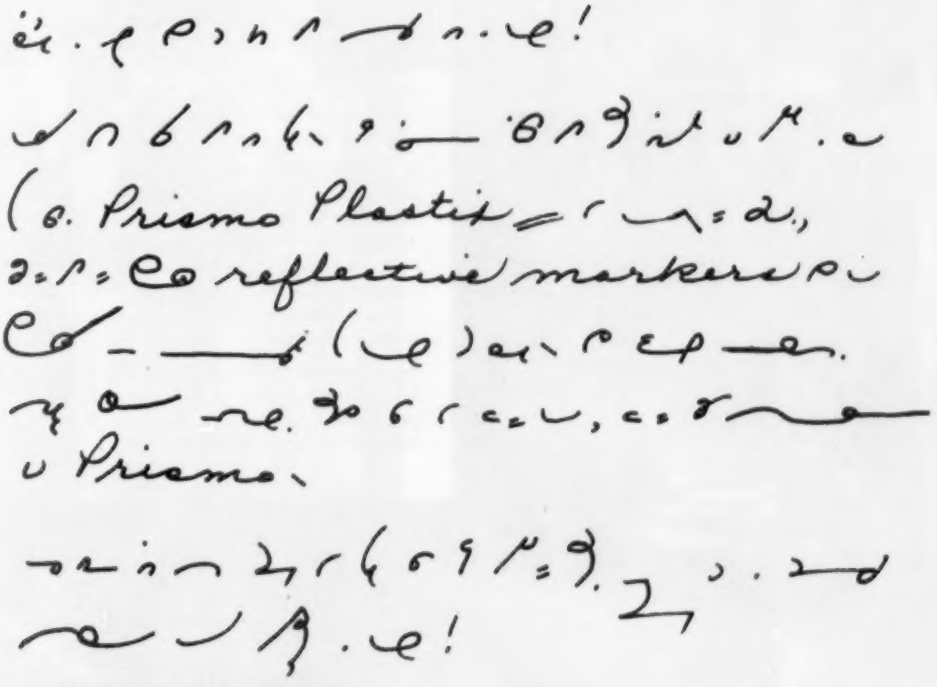

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In Greer, as in other progressive cities . . . North, South, East and West . . . modern-minded engineers have chosen Kerrigan Lighting Standards to light their city's streets.

Tall, tapered and beautiful, Kerrigan lighting standards are ***Weldforged*** of high-strength, low-alloy steel. Maximum strength is combined with beauty of design to meet the highest engineering standards and conform to I.E.S. Street Lighting Codes.

If your city is in need of modern street lighting, we invite you to consider KERRIGAN. Whatever your location Kerrigan will serve you well. Fabricated to weather both the elements and the years, they withstand desert sun, winter's ice and rain, the bite of salt and sand and the lash of hurricanes.

Let us send you detailed descriptive catalog and specifications. Write now for your FREE copy of our new Lighting Standard Catalog just off the press.

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"For better lighted city streets the standard is Kerrigan!"

KERRIGAN IRON WORKS, Inc.

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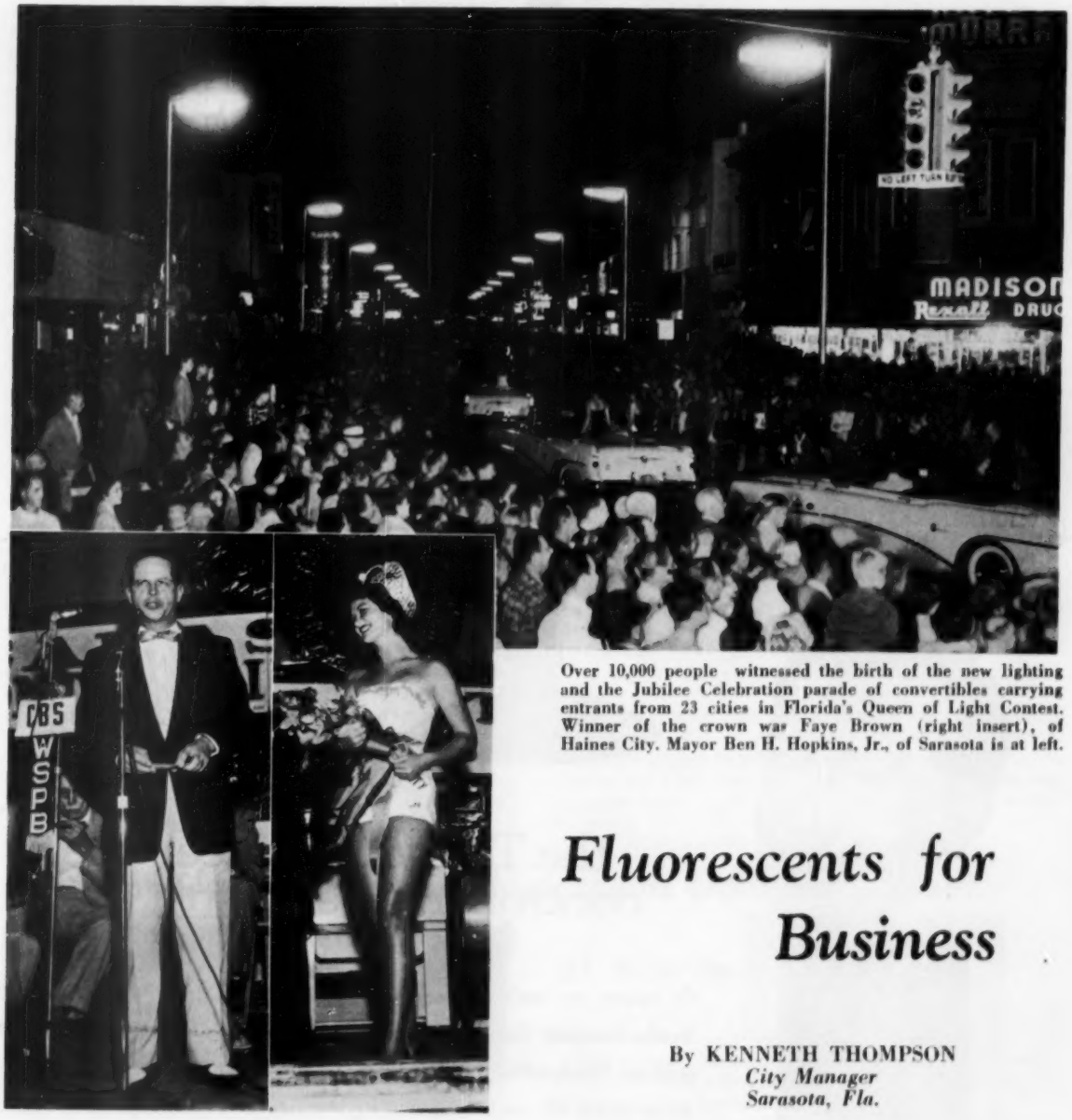

Over 10,000 people witnessed the birth of the new lighting and the Jubilee Celebration parade of convertibles carrying entrants from 23 cities in Florida's Queen of Light Contest. Winner of the crown was Faye Brown (right insert), of Haines City. Mayor Ben H. Hopkins, Jr., of Sarasota is at left.

Fluorescents for Business

By KENNETH THOMPSON
City Manager
Sarasota, Fla.

THIS Florida coastal resort city of 28,000 people, which was settled by Scotch land developers in 1885 and has since been left with the imprint of the Ringling Brothers of circus fame, has a growth history of doubling its population every 10 years for the last 40 years. The trend continues.

It is in transition from a one-street main business-district city to an area business district and, as would be expected, it is experiencing the full list of problems attendant on rapid growth, particularly that of preserving the ability of the original main business district to retain its place as a major part of the economic base of this thriving and progressive resort community.

The municipal government's part in this effort consists of modernizing, insofar as possible, within its financial structure, all streets, pavements, city utilities, and lighting facilities, as well as developing means for free circulation of traffic, and adequate parking. This encourages the property owners to modernize their structures and facilities. As a part of this program an installation was made by the city of fluorescent street lights on four blocks of Main Street, for a distance of a little over one-half mile. This installation consists of 30 General Electric form 206 luminaires on 30-foot Ker-

the Traffic Engineer uses controllers that think for his staff...

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AUTOMATIC SIGNAL

DIVISION

EASTERN INDUSTRIES, INC.

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rigan steel poles with single conductor overhead feed. Each of the new standards is equipped with a festoon attachment and provisions for a panel display. Because the pavement width between curbs was only 50 feet, the installation was staggered with one light per each 755 linear feet of street. These replaced 56 4,000-lumen ornamental units, each of which were 12 feet in height.

Merchants Voted Fluorescent

The selection of fluorescent lighting was made principally by the Main Street merchants through a committee that carefully considered incandescent, mercury vapor, too. The City Commission was willing to install any one of the three. The merchants' committee recommended fluorescent mainly because that light appeared to be more suitable for business promotion than incandescent or mercury vapor and more in harmony with the large amount of neon on the store fronts.

The cost, about $500 per unit, is the highest of the three types due to the cost of the luminaire. The extra initial cost, however, was overbalanced by fluorescent lights' superiority as a trade incentive. The operating cost of the new system is only 10% more than the old, with a fivefold increase in illumination.

An impressive ceremony commemorating the 75th anniversary of the development of the electric light by Thomas A. Edison was held on October 21, 1954, when the old system was turned off and the new system turned on. The design intensity was for an average of 1.5 foot-candles. Tests made after installation showed the minimum at the center line of the street to be slightly over 1.5 foot-candles and an average of well over 1.5, with very uniform distribution and casting excellent lighting on the store fronts.

The city's oldest native resident, A. B. Edwards, turned the old lights off and the son of Sarasota's Mayor, Ben Hopkins, signaled the turn-on for the fluorescent lights. The difference in the ages of these two participants was 75 years, matching the 75th Jubilee.

The long-range plan which has been submitted to the City Commission contemplates annual additions to the fluorescent system in the business districts, the installation of mercury vapor for nonbusiness-traffic arteries, and continuation of the policy of adding overhead incandescent units in the residential districts. The Florida Power and Light Company supplies energy, patrols, and relamps under its street-lighting contract with the city.

It's Better Lighting By 10 to 1

THERE is an old saying that a chain is only as strong as its weakest link. Perhaps we can also say, a lighting system is as bad as its darkest spots. A test chart giving foot-candle readings along Sarasota's Main Street with the old lights and the new lights shows the superiority of the new system of fluorescent luminaires.

The readings down the center line of the pavement, with the new system, varies only from a low of 1.50 foot-candles to a high of 1.65, with an average of 1.62.

The old system had a low of 0.14 foot-candle and a high of 0.35, with an average of 0.244, or less than one-sixth of the new system. The average illumination, in the curb-side driving lane, shows an improvement of better than four times. Overall, this ratio is about 5 to 1.

This, however, does not take into account the great improvement in evenness of pavement brightness and reduction in glare, due to the great increase in mounting height — from 11 feet to 29 feet — and low brightness of the large fluorescent source. In terms of seeability and comfortable vision, the improvement with the new lighting is probably nearer a 10 to 1 ratio. And as City Manager Kenneth Thompson points out, we are enjoying this for an increase of less than 10% in operating costs.

A. F. DICKERSON
Sarasota, Fla.

Wall-Mounted Vertical Fluorescents Light Main Street of Aberdeen, Scotland

Mounting heights and spacing of the new wall-mounted cold cathode fluorescent luminaires were varied to suit the face of Aberdeen's Town House (City Hall), on Union Street.

SCOTLAND'S third largest city, ancient Aberdeen, which has zealously improved its layout since the 18th century, now has as its latest feature of civic development a modern street-lighting system claimed to be the only one of its kind in the world.

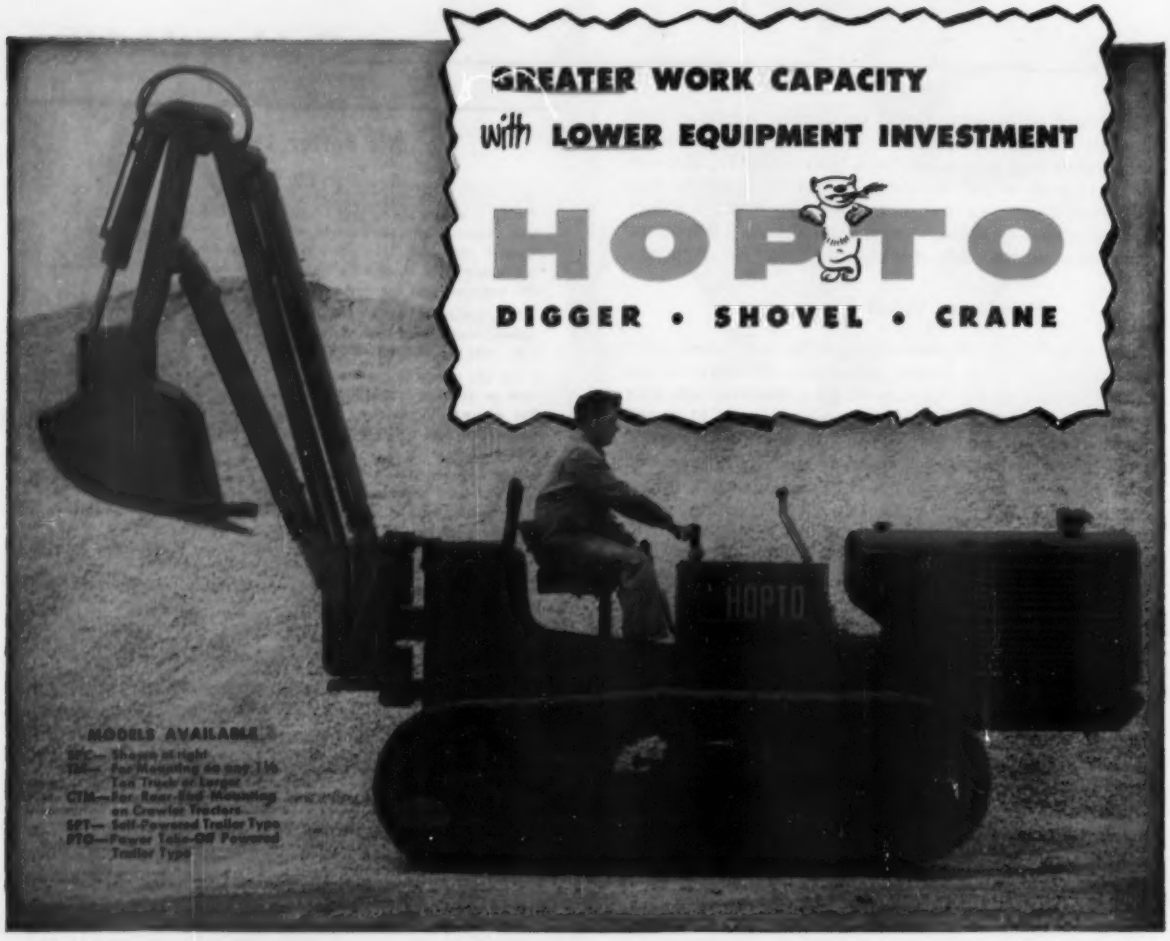
For nearly 200 years, Aberdonians have striven to enrich local amenities, developing a small but prosperous port into a handsome city. Today, Aberdeen's most striking features are its main streets and buildings. Two most important streets, Union Street and Union Terrace are equipped with cold cathode fluorescent lanterns or luminaires.

Main Trunk Road

Union Street, broad and carrying heavy vehicular and pedestrian traffic, is bordered by big granite buildings. All radial roads converge on Union Street, which is the main trunk road.

Since it was felt preferable to light Union Street

(*Continued on page 165*)


GREATER WORK CAPACITY
with LOWER EQUIPMENT INVESTMENT
HOPTO
DIGGER • SHOVEL • CRANE
MODELS AVAILABLE
SPC— Shown at right
TM— For Mounting on any 1½ Ton Truck or Larger
CTM—For Rear-End Mounting on Crawler Tractors
SPT— Self-Powered Trailer Type
PTO—Power Take-Off Powered Trailer Type
HOPTO

EASY-TO-OPERATE HOPTO LOADS, TRENCHES, EXCAVATES!

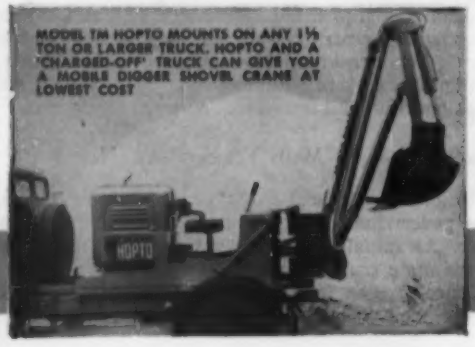
Here's the low-cost, easily operated unit you have been waiting for! The new and improved Model SPC combines all the features of the other work-hungry HOPTO models plus the light bearing pressure of 3pounds per square inch necessary for work on swampy soils. Bearing pressure of 17" track pads is so light that unit may be moved across landscaped areas without disturbing turf.

Complete unit is Badger built. The 20% overload safety factor and the built in by-pass and relief valves protect the completely hydraulic Model SPC. Four easily-actuated levers conveniently banked for the operator control every movement of HOPTO from 190° swing to 16'4" reach . . . from 11'4" digging depth to hydraulic control of bucket that permits 'straight-down' excavation for foundations septic tanks, etc.

In average to heavy soils, the Model SPC has an hourly trenching capacity of 60' of 2' trench 6' deep. Fast cycling and ease of operation gives HOPTO a loading capacity of 40 cubic yards per hour with a quarter-yard bucket. Larger buckets are available for handling bulky materials. With backhoe, HOPTO has a loading clearance of 8'6"; 10' clearance with shovel bucket.

OPTIONAL EQUIPMENT MAKES HOPTO A MOBILE CRANE

A crane boom to replace dipper stick converts HOPTO into a mobile crane for spotting timbers, trusses, steel . . . for placing heavy equipment, spotting culvert sections, unloading bulky equipment. Crane boom may also be equipped with hydraulically controlled grapple with a loading clearance of 18'. Same attachments are available for TM Model shown at left.


MODEL TM HOPTO MOUNTS ON ANY 1½ TON OR LARGER TRUCK. HOPTO AND A 'CHARGED-OFF' TRUCK CAN GIVE YOU A MOBILE DIGGER SHOVEL CRANE AT LOWEST COST
HOPTO

Write TODAY for complete information on the model best suited for your particular needs. HOPTO's low cost holds down equipment investment; helps you maintain or exceed schedules!

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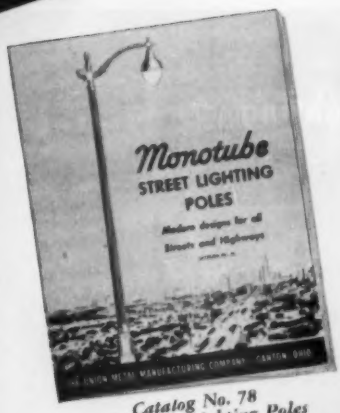
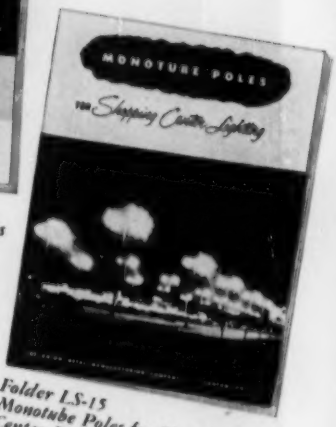


Catalog No. 78
Steel Street Lighting Poles

Catalog No. 85
Aluminum Street Lighting Poles

Catalog No. 82
Steel Brackets and Mast Arms



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Check the items you want on the handy coupon below and mail it today . . . or write to The Union Metal Manufacturing Company, Canton 5, Ohio.

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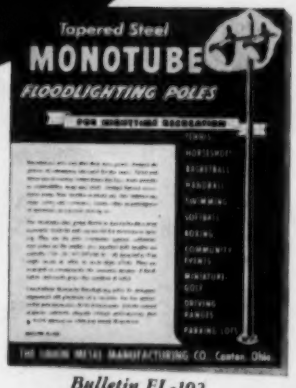
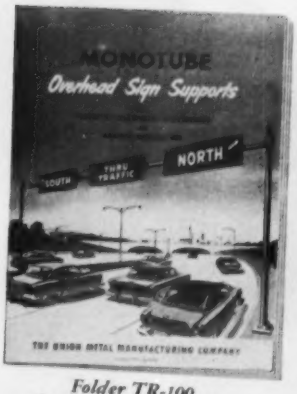
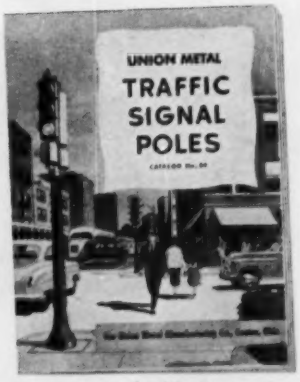


Bulletin FL-102
Floodlighting Poles for Nighttime Recreation



Folder TR-100
Overhead Sign Supports



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The latest achievement in fluorescent street lighting

FACTS about the new Westinghouse fluorescent street lighting luminaire

FACT: Top efficiency—The new 4-FSL-72 fluorescent luminaire has a large one-piece reflector and offset lamp arrangement. No physical obstructions interfere with light distribution.

FACT: Day and night eye appeal—The smooth fiber glass hood and clear plastic cover blend to produce a clean silhouette by day and a comfortable light source at night.

FACT: Easily maintained—Cover opens from either side by releasing 3 spring tension latches permitting speedy relamping and cleaning. Sponge neoprene gasket seals out bugs and moisture. Cover can be easily replaced in frame by removing 4 screws—slide out old cover—slide in new—without further adjustment.

FACT: Extremely durable—rugged fiber glass hood does not require paint. Extruded methylmethacrylate cover will not craze or discolor. Wiring is by duplex circuit so when a lamp fails, only one lamp in a reflector goes out.

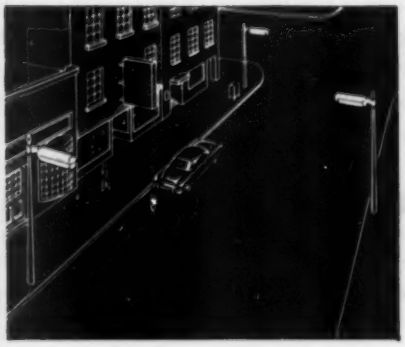
4-FSL-72 can be mounted horizontally or at any angle between 20° and 30° for different light distribution patterns.

For more FACTS see *The Man With The Facts*—your Westinghouse representative.

J-04364

YOU CAN BE SURE...IF IT'S

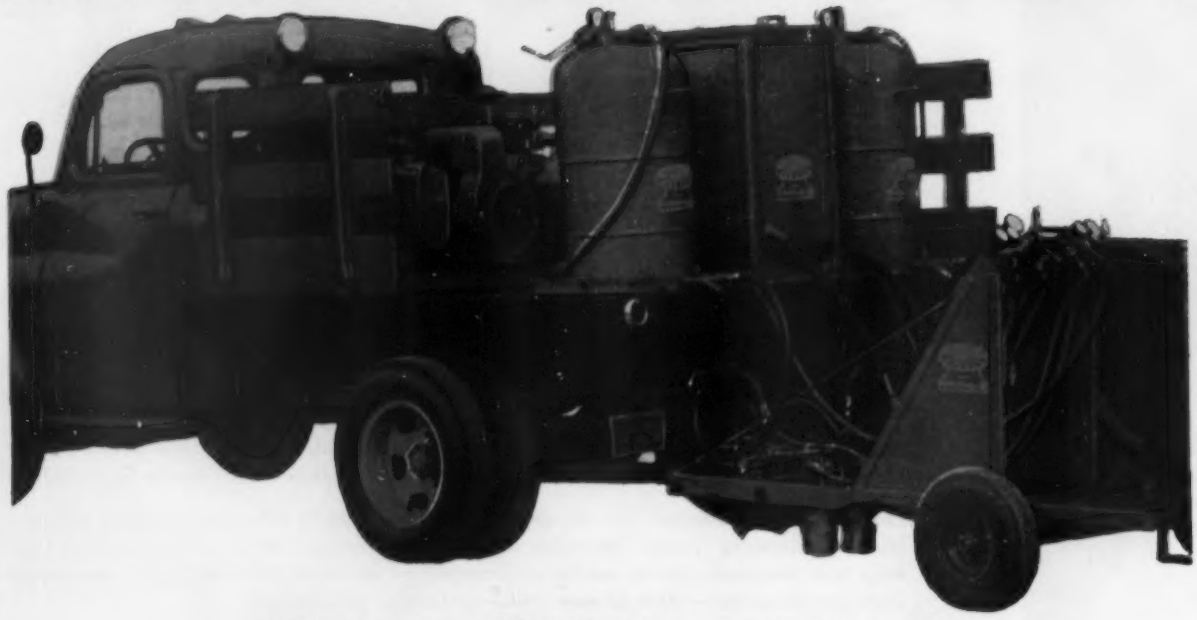
Westinghouse



This exciting new look in street lighting is an attractive addition to any community.

For all the benefits of fluorescent lighting—ask about the new 2-FU-72 for tunnels and underpasses.

MEET MR. BIG!



WALD TRUCK-O-LINER

Model 345

Here's the striping unit that lays down a lot of line in a little time. Built for big production jobs, it will stripe miles of highway with speed, efficiency and economy—and does it in single or multiple lines and colors, with reflective or non-reflective marking materials.

WALD
Reflectoliner Jr.
Lightweight, but packs a wallop! This durable striper has a petty cash price tag but does a great job with either plain or reflective materials!
WALD
Model 12
Rugged, Reliable and Ready . . . for every single line striping job. Self propelled, with 100% air reserve.

BIG SAVINGS

3-man team technique, plus the multiple line feature eliminate separate operations—save time and money. Higher speed, fewer stops, greater efficiency give you lowest cost-per-mile striping of any liner on the market. When not on striping operations truck unit can be used for other purposes.

BIG PRODUCTION

Model 345 *really* turns out the work! Designed especially to meet the need for a high speed, production-line striping unit, the Truck-O-Liner's big capacity keeps you in continuous operation for long periods without reloading.

Write or phone today for catalog W-10

WALD INDUSTRIES, INC.
HUNTINGDON, PENNA.

1176

Cold cathode fluorescent lanterns are delivered to Aberdeen in batches of 12 from the London factory.

(*Continued from page 159*)

without using standards and so keep the broad, clear aspect of the street, a cold cathode lantern was adapted for wall mounting.

This created a maintenance problem. Routine maintenance of luminaires with tower wagons might obstruct pavements and shop fronts. The solution was to use the Osram cold cathode fluorescent tube which has a life of 15,000 hours. It is unlikely that the luminaires will have to be opened more often than every four years. When attention is needed, each lantern can be quickly replaced.

Each luminaire has five 67½-watt tubes with a total light output about equal to that of a 400-watt mercury lamp. The tubes are inside an opal "Perspex" cylinder with decorative aluminum fittings, which house the transformers and control gear. Mounting plates for the brackets are each fixed to the buildings by three wall anchors.

Since Union Street varies in gradient and the building facades differ in architectural features, spacing and mounting heights could not be rigidly fixed. These have been varied in some cases to suit the buildings.

The wall brackets have been specially designed to allow the lanterns to be removed without disturbing the wall fittings. They also allow adjustment to be made in projection from the buildings' faces. Where the building heights and building line have varied markedly, special brackets are used to keep the lantern arrangement symmetrical. Some special brackets are on the corners of buildings; others, like flagpole mountings, give extra height where needed.

Reflected light from the buildings is a valuable factor where a wide street is lighted by wall-mounted lanterns. A statutory power of the Aberdeen Council will help to maintain this factor since property owners in Union Street can be compelled to clean building exteriors when this is considered necessary.

Lighting After 75 Years

THE electric-lighting industry had its beginning 75 years ago when Thomas A. Edison lighted a carbon-filament lamp at Menlo Park and kept it burning for 40 hours. There has been remarkable progress in standards of lighting in every decade since then. But even with today's high standards, General Electric's experts predict the rate of improvement will continue at a rapid pace in the future.

Consumption of Electricity to Increase

Electricity used in residential lighting, although tripled since 1944, is expected to double its present volume within the next 10 years.

In commercial lighting, the nation's consumption of electricity has doubled in the last 10 years and should nearly double again in the next 10. A similar pattern of growth is foreseen in street lighting. For communities, the effects of better street lighting as seen in decreasing nighttime traffic mishaps and crime reduction have been well documented. In an average community less than 15% of the street lighting is adequate. Only five U. S. cities are lighted throughout in accordance with the American Standard Practice of Street and Highway Lighting. To relight all communities to this standard will require 4,000,000 kw of connected street-lighting load and an annual power consumption of 16,000,000,000 kwhrs. These facts indicate the tremendous potential in the field of street lighting.

General Electric's lighting business is solidly built on the principle of service. Although lighting is one of our oldest businesses, after 75 years, its future seems even brighter than its brilliant past.

RALPH J. CORDINER, *President*
General Electric Company
Schenectady, N. Y.

Lights-on at Brandywine Highway

A REPLICA of Thomas Edison's first incandescent bulb, developed 75 years ago, turned on a new street-lighting system along Binghamton's (N. Y.) modern Brandywine arterial highway.

When Mayor Donald W. Kramer, turned on the model of the famous lamp, its light fell on an electric eye which activated the highway's new lighting system consisting of 116 General Electric Form 101R luminaires, equipped with Holophane Refractors which distribute the light uniformly over the roadway.

Spaced 124 feet opposite on each side of the divided highway, the lights are mounted at a height of 28 feet on 14-foot mastarms. Each lamp is rated at 1,000 candlepower, 68 times as powerful as Edison's original incandescent bulb.

Attending the "lights-on" ceremony with Mayor Kramer were: Public Works Commissioner William J. Spellicy, City Engineer Regis C. McNamara, Councilmen Thomas E. Hastings and Robert F. Baker, and representatives of the New York State Electric and Gas Corporation, installers of the equipment.

a parking meter does its job with a signal
EXPIRED
all red (OVER PARKING)
no red (LEGAL)
COIN
NEVER PARK RED DURING LEGAL PARKING. LARGE SIGNAL AREA SEEN FROM BOTH SIDES.
FOR ECONOMICAL ENFORCEMENT THE SIGNAL MUST BE SEEN
50 yards away
FROM MOVING PATROL VEHICLE

MODEL H PARK-O-METERS

MEET EVERY REQUIREMENT IN ANY CITY

PARK-O-METER is adjustable to take any one or more of commonly used coins: pennies, nickels, dimes or quarters, through the same coin-slot to allow 6 minutes to 24 hours parking time in any coin and time combination.

This complete convertibility assures adaptability to changing traffic requirements and to either on-street or off-street operation.

The simplicity of PARK-O-METER's one-hand, automatic operation appeals to the public and builds quick acceptance and approval.

Ask for a demonstration . . . there is no obligation on your part. You owe it to yourself to know all about PARK-O-METER.

Magee-Hale PARK-O-METER COMPANY

COMMERCE EXCHANGE BUILDING • OKLAHOMA CITY 2, OKLAHOMA

Binghamton's need for a fast, efficient, and legal means of duplicating records was provided by the Hunter Hecco-kwik photocopier which can reproduce documents in 45 seconds.

Copies of Vital Statistics By Photocopier

By DR. C. A. SARGENT
City Health Officer
Binghamton, N. Y.

TEMPERS crackled on both sides of the public desk in the Binghamton (N. Y.) City Register's office. Lunch hour and the hour after work are the only times many people can get to City Hall to procure vital documents. A birth certificate took four to eight minutes to type, and those waiting wanted 1 to 10 copies.

We just had to find a better means of duplicating records, a way to eliminate proofreading, and a way to use clerical workers instead of typists. We found it in the Hunter Hecco-kwik machine, which works on a principle similar to that of the self-developing camera. Therefore, it makes legally accepted copies of all written, typed, drawn, or printed materials up to 12 inches in width.

Documents are now produced in 45 seconds, necessitating waits of only one to eight minutes and saving up to two hours. The resultant improvement in the public temper is reflected in a calmer attitude on the part of our own girls and a considerably increased work output.

250 Babies a Month

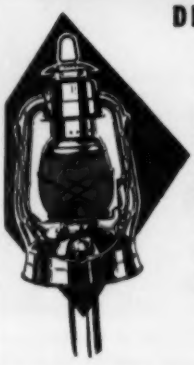
Every time a child is born a birth certificate must be filed with the Bureau of Vital Statistics. The Register signs the certificate and makes a record on an index card. On the fifth of each month, the office binds these index cards into books and sends them to Albany for the state's records. An extra copy must be made for the city's permanent files.

With the new machine one clerk makes 250 photographically accurate copies in three hours.

The department also copies an average of 80 death certificates per month. As with the birth certificates, secretaries make a copy of each death certificate for city records before sending the originals to Albany for state record keeping. Binghamton townspeople also require copies of death certificates, as proof of death to insurance companies, to settle estates, for transfer to automobile titles, for state and federal tax purposes, and for military and veteran organizations. Now, as many as eight to ten copies are supplied in eight minutes.

JOSEPH M. HADFIELD, radio consultant to Chicago Fire Commissioner M. J. Corrigan hit on the idea of utilizing the Fire Department aerial ladder as an emergency antenna support for fire and police radio stations in case the regular tower is knocked out. The antenna is clamped or taped to the ladder top, says Motorola.

DIETZ
SIGNALS of SAFETY

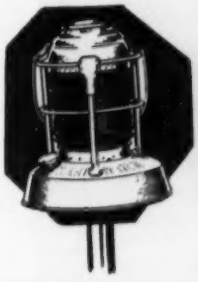


DIETZ TUBULAR LANTERNS

RED says DANGER. DIETZ LANTERNS say STOP. Light as needed, bright, or controlled without diminishment or failure till the last drop of kerosene. Rugged quality, economical performance. Backed by the oldest and largest manufacturer of portable light.

DIETZ-EMBURY "TRAFFIC-GARD" SAFETY LANTERN

"Magnified beam" seen for great distances – burns 100 hours on a pint of kerosene. Non-tip base.



DIETZ "NIGHT WATCH" SAFETY LANTERN

A miniature beacon with the new "Pencil Beam" visible from any direction close by or at long distances. Rugged, inexpensive, longest-burning, over 100 hours.

DIETZ HIGHWAY TORCHES

Complete line of bomb and flat base types in DIETZ Blue threaded collar burner models and DIETZ – EMBURY Red Cam lock burner models. Made to give faultless service under most severe conditions.

Send for Descriptive Folders

EST. R. E. DIETZ COMPANY SYRACUSE 1, N. Y. 1840

TYPE F TRAFFIC CONTROLLER at the intersection of Taft and Reading Roads reduced the number of traffic accidents from 41 in 1951 to 23 in 1953. Inspecting the controller are (left to right) R. M. Fielding, Assistant Traffic Engineer of Cincinnati, G. W. Howie, Utilities Director of Cincinnati, and C. J. Schurenberg, General Electric traffic control specialist.

General Electric Type F Traffic Controllers Help Cincinnati Move Traffic 7% Faster

INTERCONNECTED SYSTEM of Type F controllers keeps traffic moving through complicated intersections on Reading Road.

BUSES were able to cut 4 minutes off their schedules for the run on Reading Road after the Type F system was installed.

A new traffic plan in Cincinnati, Ohio, has increased the average speed of vehicles by 7% since 1951, even though vehicle registration has increased by 10% during the same period. Credit for this improvement goes to George W. Howie, Utilities Director of Cincinnati, Robert J. Stock, and Roy Fielding, who have done the electrical and design work.

G-E TYPE F CONTROLLERS play an important part in Cincinnati's traffic plan. Over 100 Type F expansible controllers are now installed on several of the more important arterial streets.

TRAFFIC ACCIDENTS on highways feeding in to the city are another problem that Type F controllers have helped solve. Reading Road, pictured, is US 25 and US 42, and also carries a large amount of traffic from suburban areas. An interconnected system of 21 Type F expansible controllers and a G-E Type F master controller on one section of Reading Road brought about a 22% reduction in accidents after the signals were installed.

COMPLETE FLEXIBILITY makes the expansible Type F controller universally applicable in the field of pre-timed traffic control, interconnected or non-interconnected. It can be installed to meet your present requirements, and later on adapted to more complex traffic problems of the future by the simple addition of accessories.

GET FULL INFORMATION from your nearest authorized G-E Traffic Distributor or G-E Apparatus Sales Office, or write Section 453-63, General Electric Co., Schenectady 5, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Modern Water Rates

(Continued from page 145)

Typical Costs Bimonthly

(not discounted)

Gallons	*Cubic Feet*	*Costs*
6,000	800	$1.95
15,000	1,333	4.97
30,000	2,667	9.95

Remarks

1. The department contributes water without charge for street flushing and sewer flush tanks only. No water funds are diverted to other departments.
2. Meters are read bimonthly; placed in building occupied by user, but owned by department.
3. Bills are processed on a National automatic billing machine.
4. Rates remain unchanged for many years.

VERNE LIVINGSTON
Manager of Utilities
Gas and Water Department

MACOMB, ILL.

Rates Per Month

Volume of Water (in gallons)	*Metered Charges* (per 1,000 gallons)
First 10,000	$0.65 (min.)
Next 40,000	.52
" 50,000	.325
Excess	.195

General Data

Population served	10,000
Services (100% metered)	3,186
Hydrants	324
Valves	340
Miles of mains	38
Supply—lake and river	
Treatment—softening, rapid sand filter	
Storage facilities—elevated tank, 100,000 gallons; covered reservoir, 600,000 gallons	
Average demand	0.7 mgd
Plant capacity	1.7 mgd

Typical Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.95
5,000	667	3.25
10,000	1,333	6.50

Remarks

1. Department furnishes water free to other city departments only. About 20% of water department gross revenue is diverted to the city's general fund.
2. City owns all ⅝-inch meters; users own larger meters. Meters are placed either at the lot line in meter boxes, or in the building occupied by the user if conveniently located.
3. Bills are processed on a Burroughs billing machine.
4. Rates have been raised 30% in recent years.

W. S. NEWELL
Superintendent

TROY, OHIO

Rates Per Quarter

ize of Meter (in inches)	*Minimum Charges*
⅝	$3.50
¾	5.00
1	7.00
1¼	12.50
1½	17.00
2	25.00
3	46.00
4	75.00

Volume of Water (in cubic feet)	*Quantity Charges* (per 1,000 cubic feet)
First 1,000	$3.50
Next 4,000	3.00
" 5,000	2.50
" 10,000	2.00
Excess	1.20

Miscellaneous Regulations

1. Rates to users outside the city limits are 10% higher.
2. Bills not paid by the 20th are increased 10%. Bills are due on the first of the month.

General Data

Population served	12,500
Services (100% metered)	3,600
Hydrants	150
Valves	720
Miles of mains	42
Supply—wells	
Treatment—lime, soda-ash softening	
Storage facilities—elevated tank, 500,000 gallons; covered reservoir, 1,000,000 gallons	
Average demand	1.6 mgd
Plant capacity	4.0 mgd

Typical Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
9,000	1,200	$4.10
15,000	2,000	6.50
30,000	4,000	12.50

Remarks

1. City owns all meters; places them in a meter box at the lot line, or in the basement.
2. Bills are processed on Burroughs billing equipment.
3. Present rates went into effect April 1950, and represent a 20% raise.

FRANKLIN RUCK
Water and Sewage Supervisor

MEADVILLE, PA.

Rates Per Quarter

Size of Meter (in inches)	*Minimum Charges*
⅝ or ¾	$1.65
1	5.00
1½	7.00
2	10.00
3	15.00
4	25.00
6	100.00

Volume of Water (in cubic feet)	*Quantity Charges* (per 100 cubic feet)
First 2,500	$0.20
Next 7,500	.15
Excess	.12
All industries	.12

Miscellaneous Regulations

1. A charge of 5% is added to bills that are not paid promptly.
2. Customers outside the city limits are charged 50% above the regular rate.

General Data

Population served	20,000
Services (100% metered)	5,500
Hydrants	318
Miles of mains	48
Supply—wells	
Treatment—chlorination	
Storage facilities—elevated tank, 150,000 gallons; open reservoir, 4,500,000 gallons	
Average demand	2.5 mgd

Typical Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
9,000	1,200	$4.40
15,000	2,000	4.00
30,000	4,000	7.25

Remarks

1. Some water funds are diverted to other uses.
2. Meters are owned by the water user and are placed in his building.
3. Bills are processed on Addressograph equipment.
4. Rates have risen only 20% in 50 years.

DEWAYNE DAY
Superintendent

ALLIANCE, OHIO

Rates Per Quarter

Volume of Water (in cubic feet)	*Metered Charges* (per 1,000 cubic feet)
First 1,000	$3.75 (min.)
Next 6,500	2.40
" 7,500	1.95
" 165,000	1.50
" 180,000	1.02

Miscellaneous Regulations

1. 10% discount for prompt payment. No discount on minimum bill, but 10% penalty for late payment is added.
2. Users outside the city pay $4.13 minimum. All other rates remain unchanged, but no discount is given, and the 10% penalty for late payment is made.

General Data

Population served	30,000
Services (99% metered)	7,697
Hydrants	901
Valves	919
Supply—river and reservoir	
Treatment—rapid sand filters	
Storage facilities—standpipes, 5,259,000 gallons	
Average demand	5.3 mgd
Plant capacity	7.5 mgd

Typical Costs Per Quarter

Gallons	*Cubic Feet*	*Charges*
9,000	1,200	$4.25
15,000	2,000	6.15
30,000	4,000	10.95

Remarks

1. City distributes no water free except to other city departments.
2. City owns all water meters; places them in a building occupied by user.
3. Bills are processed on a Burroughs Sensimatic billing machine.
4. Present rates went into effect in 1949 and represent a 25% raise.

DONALD D. HEFFELFINGER
Engineer-Superintendent

BATAVIA, N. Y.

Rates Per Quarter*

Volume of Water (in gallons)	*Metered Charges* (per 1,000 gallons)
First 10,000 (min.)	$0.30
Next 2,990,000	.22
" 2,000,000	.18
" 5,000,000	.15

* 10% is added for late payment.

General Data

Population served	17,000
Services (100% metered)	4,400
Hydrants	340
Miles of mains	48
Supply—creek	
Treatment—cold lime softening, filtration, chlorination	
Storage facilities—elevated tank, 1,500,000 gallons; covered reservoir, 600,000 gallons	
Average demand	2 mgd
Plant capacity	3 mgd

Typical Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
10,000	1,300	$3.00
15,000	2,000	4.10
30,000	4,000	7.10

Remarks

1. City supplies no free water except to city departments.
2. Management is by a Board of Water Commissioners which can borrow money without interest from the city's capital revolving fund. Department has a

debt of $100,000 which is being refunded at rate of $18,500 per year. A portion of capital expenses is charged separately to the consumer each quarter. For instance, a $1 additional charge is presently being made to finance a $50,000 capital charge for an industrial extension.

3. Distilled water is furnished free to users who bring their own containers.

4. Meters are placed in the users' buildings. A meter-service charge for replacement and repair of 50 cents is made each quarter; about 400 meters are replaced every year.

5. Present schedule went into effect in 1952, raising the rates 30%. The softening program was adopted at the same time.

6. Bills are processed on a Burroughs machine.

N. M. Fuller
Superintendent

FRIONA, TEXAS
Rates Per Month

Size of Meter (in inches)	*Service Charges*
⅝	$1.50
¾	1.70
1	2.30
1¼	2.90
1½	4.00
2	6.00

Volume of Water (in gallons)	*Quantity Charges*
First 1,000	$0.50
Next 1,000	.45
" 1,000	.40
" 1,000	.35
" 1,000	.30
" 6,000	.25
Up to 1,000,000	.20
Excess	.15

General Data

Population served	1,644
Services (100% metered)	518
Hydrants	53
Valves	149
Miles of mains	8
Supply—wells	
Treatment—none	
Storage facilities—elevated tank, 50,000 gallons; covered reservoir, 100,000 gallons	
Average demand	0.25 mgd
Plant capacity	1.6 mgd

Typical Costs Per Month

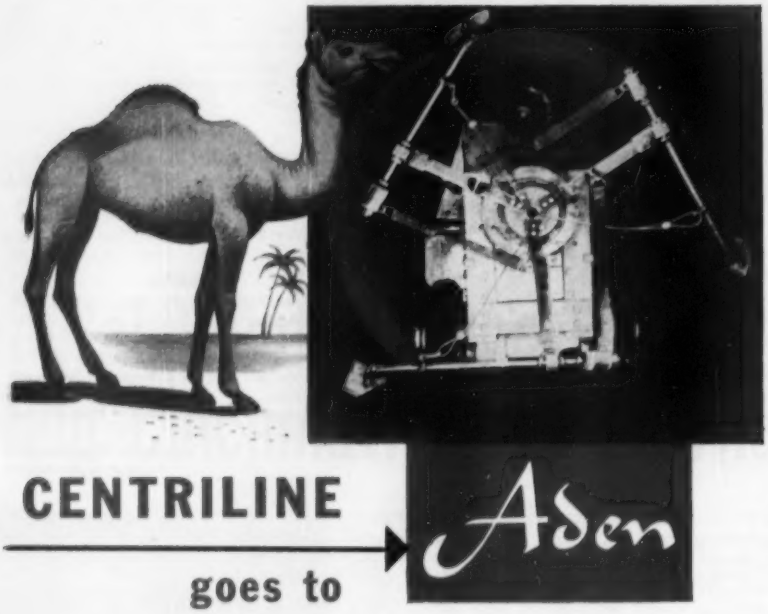
Gallons	*Cubic Feet*	*Costs*
3,000	400	$2.85
5,000	667	3.50
10,000	1,333	4.75

Remarks

1. Meters are owned by the city, and are placed in meter boxes at the lot line.

2. Rates have remained unchanged for many years.

Roy Wilson
Superintendent



CENTRILINE goes to Aden

Deep in the middle east, Centriline is currently centrifugally lining 11,920 feet of salt water mains for the Anglo Iranian Petroleum Company's Aden Refinery. The mains vary in diameter from 24" to 74" and are being lined with cement mortar in thicknesses of from ⅜" to ¼". The General Contractor, George Wimpy & Co. of England and the Pipe & Erection Contractor, Bechtel International Corp. of San Francisco, selected the Centriline process for the same reasons that have made it famous across the United States . . . guarantee against interior leakage, corrosion and tuberculation . . . low pumping costs . . . and high carrying capacity. Whether old or new, when a pipe is Centrilined its life is extended indefinitely. For complete details, call on Centriline today.

3,500,000 FEET OF EXPERIENCE

CEMENT-MORTAR LINING OF PIPES IN PLACE

CENTRILINE CORPORATION
A subsidiary of Raymond Concrete Pile Co.
140 CEDAR STREET • NEW YORK 6, N.Y.
Branch Offices in Principal Cities of United States and Latin America

SALINAS, CALIF.
Rates Per Month

Size of Meter (in inches)	*Minimum Charges*
⅝	$1.65
¾	2.00
1	2.50
1½	3.50
2	5.00
3	10.00
4	25.00
6	50.00
8	75.00

Volume of Water (in cubic feet)	*Quantity Charges*
First 500 or less	$1.65*
Next 2,500	.20†
Excess	.09†

* For ⅝-inch meter only. For larger meters, the minimum charge entitles the customer to the amount of water that can be purchased at the quantity charge.

† Per 100 cubic feet.

Public Fire-Protection Charges Per Month

Facilities	*Company-Owned* Hydrant	*City-Owned* Hydrant	*City-Owned* Hydrant, Service Pipe and Fittings
Wharf Hydrant			
Main less than 4 inches	$1.50	$1.25	$1.00
4-inch main and larger	2.00	1.75	1.50
Standard Hydrant			
Single outlet	2.50	2.00	1.75
Double outlet	3.50	2.75	2.25
Triple outlet	5.00	4.00	3.25

Private Fire-Protection Rates Per Month

Service Line (in inches)	*Rates*
4	$5.50
6	7.00
8	10.50
10	25.00

General Data

Population served	20,000
Services (100% metered)	6,994
Hydrants	313
Miles of mains	70.5
Supply—weirs	

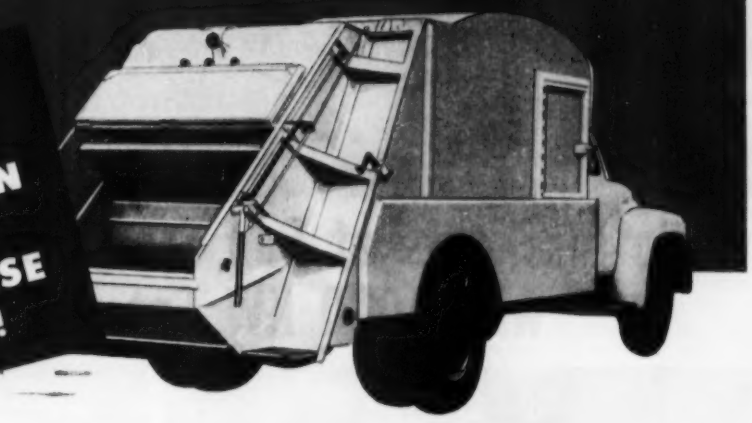
(Continued on page 175)

THE HERMAN RAM-PAK

Automatic PRE-PACK REFUSE DISPOSER

NEW

ONLY HERMAN RAM-PAK HAS ALL THESE FEATURES!



REVOLUTIONARY ENGINEERING FEAT IN REFUSE AND GARBAGE COLLECTION AND DISPOSAL... PRE-PACKS REFUSE AND GARBAGE TO INCREASE CARRYING CAPACITY UP TO 50%!!

- Holds More — Up to 50% More! Pre-packing is the Answer — 16 Cu. Yd. Loader Holds Up to 15,000 Pounds.
- Constant Operation — Cycle-less **Continuous** Loading. You Can Load Easily at 2 Miles Per Hour.
- Fast! Automatic Operation . . . Will **Pack** and Consume More Refuse Than 3 Men Can Gather!
- Knee-High Loading Height — Operators Don't Lift — Just **Tilt!**
- RAM-PAKS and "Eats Up" **Everything** — Cans — Glass — Boxes — Crates — Utensils — Cartons — Garbage . . . Even Steel Drums!
- No Doors — No Lifting — **All** Loading Done at **Low** Rear End Receiver.
- No "Gadgets" — Easiest Operating Refuse Disposer on the Market — By **Far!** No Long Instructional Training.
- Super Safe . . . No Exposed Moving Parts To Smash Arms and Legs.
- **Rugged!** Long Trouble-Free Life — Built to Last and Last and Last!
- 45° Dumping Angle — Unloads in 12 Seconds.

Send Today!

For the whole amazing story of how the *RAM-PAK* can speed up your refuse collection, save you money and help beautify your city . . . Mail this coupon today — No obligation.

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4400 CLAYTON AVE.
ST. LOUIS 10, MO.
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BUILDERS OF FINEST ALL-STEEL, ALL-WELDED BODIES

Cable Address HERMANBODY

THE HERMAN BODY CO.
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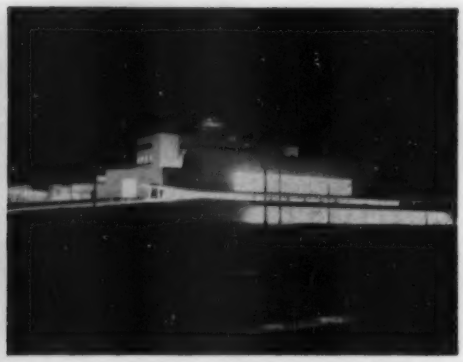
St. Louis Mo.

Please send complete details on the HERMAN RAM-PAK Refuse Disposer.

Name .....

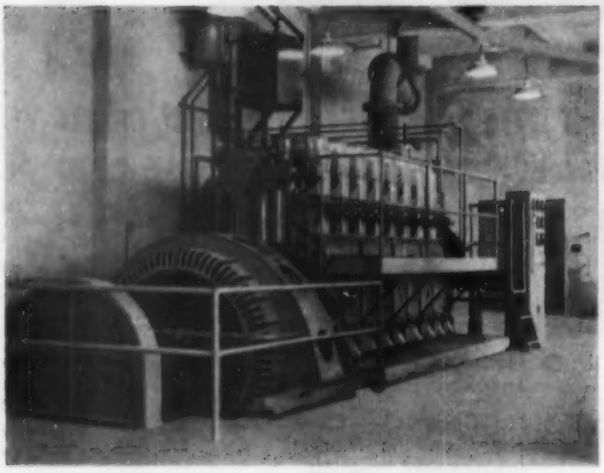
Address .....

City and Zone ..... State .....



Enterprise emergency power guarantees immediate light for the control tower, runways, and more than 466,000 sq. ft. area in terminal building with its three concourses. Here, 27 loading stations serve 11 airlines.

No blackouts at San Francisco Airport with 1000 KW Enterprise standby unit



First fully automatic unit of its type in the U.S., this Enterprise standby plant also powers drainage pumps in case of airfield flooding.

Compactness of the Enterprise engine enabled easy installation in the existing building.

Power failure at this busy new $50,000,000 International Airport would create emergencies of major proportions. But with the Enterprise diesel-electric, *fully automatic* standby generator set now in operation, this will not happen. Within 13 seconds, if power fails, the Enterprise cuts in to supply all the power needed for normal operation of control tower, runway lights, and other essential airport facilities.

Enterprise Engines serve every municipal power need. You'll find these dependable engines ideally suited for stationary or portable electric generating plants... flood or water supply pumping systems... or for powering sewage disposal plants. Contact the Enterprise sales office in your area today, or write us direct about your problem.

Further proof of Enterprise adaptability and vibration-free operation is shown by the use of the concrete cradle which was an integral part of the building.

Over a million horsepower at work the world over!

ENTERPRISE dependable ENGINES

THE SWITCH IS TO ENTERPRISE
CHOICE OF POWER EXPERTS

ENTERPRISE ENGINE & MACHINERY CO. • **Subsidiary of General Metals Corporation** • **18th and Florida Streets, San Francisco 10, California**

Boston • Chicago • Denver • Jacksonville • Kansas City • Los Angeles • Minneapolis • New Orleans • New York • San Diego • Seattle • St. Louis • Washington, D.C.

More Letters to the Editor

(See also Mail Bag, pages 5 and 7)

Fringe Parking In Washington, D. C.

The December 1954 issue of THE AMERICAN CITY carries an item on page 117 by Leslie Williams, entitled: "Pouring Cars Downtown Tends to Congest." This article discusses traffic, transit, and parking in Washington, D. C. In the sixth paragraph of his article, Mr. Williams states that "No shoppers' specials, shuttle, or express services from parking facilities are now available."

In January 1954, the Motor Vehicle Parking Agency unanimously adopted a fringe-parking program and approved construction of the first facility at South Capital Street.

In July the Congress of the United States appropriated $100,000 for fringe parking in Washington. On September 15, 1954, the Motor Vehicle Parking Agency of the District of Columbia opened a 460-car fringe-parking lot which the Capital Transit Company, on application to the public Utilities Commission, was authorized to serve. During the first 30 days, as an inducement to patronize the lot, there was no fare charged.

In addition to the South Capitol Street fringe-parking facility, the Motor Vehicle Parking Agency is planning to open a 740-space parking lot that has been made available to the District of Columbia for the Department of the Interior. A third lot, for approximately 300 spaces, will be opened in April 1955.

It might be of interest to your readers to know that all existing and proposed facilities are either on District or Federal property; there is no land cost involved other than surface treatment.

The District Commissioners' policy in connection with fringe parking has been that such parking will be made available to the public free of charge. The cost-benefit ratio of this free fringe-parking service is realized not only in savings in deferring highway and traffic expenditures, but also in relief from congestion and through increased use of mass transit. Initial expenses per car space average $100, with maintenance and operational costs thereafter amounting to about $12 per car annually.

The funds for fringe parking are derived from the curb meters pursuant to the Motor Vehicle Parking Facility Act of 1942. The expenditure of such funds for fringe parking is in accord with the aims and objectives of the Act as enacted by Congress.

MILTON M. RODES
Executive Director
Motor Vehicle Parking Agency
Washington 1, D. C.

Fairbanks, Alaska, Weather Report

The entire Fairbanks, Alaska, municipal family enjoyed reading the December issue with its story of our fast-moving city [A Sub Arctic City Moves Forward, p. 80, December 1954]. We certainly are making progress, but I wish the general public wouldn't get so frightened over the word "Arctic." People in the States have suffered so long from the moist penetrating cold that their "temperate" climate inflicts on them, that they have forgotten that the thermometer tells only a part of the story.

As of today, December 10, the winter weather has been reasonably warm in our dry, windless climate. Over last week end, the temperature dropped to 41° below zero but warmed up again to 10° below where it has been riding ever since. The sky is very clear, and frost and snow cover every pole, branch, and wire.

I noted after lunch today that the sun was setting at 1:45 p.m. In only 11 days, we will have the shortest day of the year and start back towards spring. We have over 190 of our 360 Line Material Ovalite street lights installed. Since the poles were placed before the freeze-up, two crews have continued line work and erection of the lights on the poles with very little difficulty. The street lights were turned on today at 2:20 p.m., and I believe you will agree that their tinted light from the mercury-vapor lamps on the snow and frost is beautiful indeed.

But the work that gives us our greatest satisfaction is the fine progress of our power plant. A year ago last August, we set December 1 of this year as our completion date. We missed it by eight days. On December 8, the Elliott generator produced power for the first time, and yesterday we extracted steam from it for heating purposes. It carried a load yesterday of 3,700 kw and purred along very comfortably. The peak load last night was 6,200 kw, and for the first time in recent years, when our population has been climbing so fast, the city has been able to produce enough energy to meet its total requirements. This is a construction schedule record that would look good in any city, and serves notice that Fairbanks has a record of progress that commands respect.

All of us realize that 40° below isn't exactly warm—after all, it is winter. But what worries most of us is that something may come up that will require a trip to the States where the temperature will be a humid 20° above zero and we will freeze to death.

DONALD E. EYINCK
City Manager
Fairbanks, Alaska

Use Incinerator Heat?

Mr. Swietlik's article describing his new incinerator ["Water Sprays Give Milwaukee a Fly-Ash Free Incinerator," September 1954, p. 90], deserves special attention by those concerned with air pollution. It interests us particularly since the incinerator is designed to meet air pollution standards set by Milwaukee County.*

While I realize that many problems are involved, nevertheless, in the interests of over-all economy, all of us hope that future incinerators will be able to capitalize to a greater extent on the heat generated. At this new incinerator there are approximately 150,000,000 BTU generated per hour in the combustion gases, or the equivalent of approximately a 1,000-hp boiler. This would have provided far more steam than is needed to heat a nearby public housing project, even during the severest winter weather.

J. E. BROWN
Air Pollution Control Engineer
County of Milwaukee, Minn.

* The Milwaukee incinerator uses a combination of cylindrical, mechanically stoked furnaces and water sprays in the expansion chamber for fly-ash removal, both products of Nichols Engineering and Research Corp., of New York, N. Y.

PAYLOADER®...
the proven* tractor-shovel!

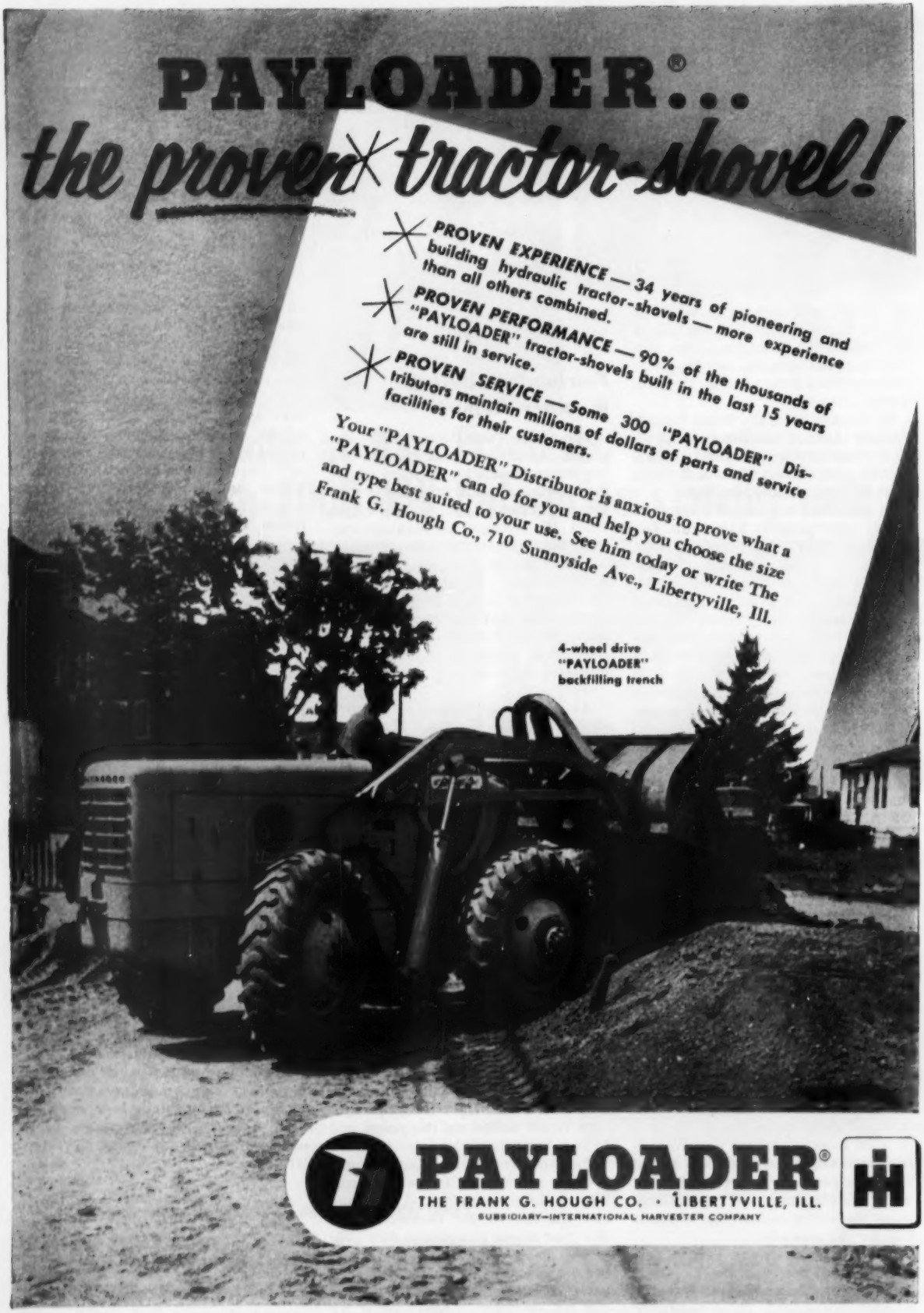
* **PROVEN EXPERIENCE** — 34 years of pioneering and building hydraulic tractor-shovels — more experience than all others combined.

* **PROVEN PERFORMANCE** — 90% of the thousands of "PAYLOADER" tractor-shovels built in the last 15 years are still in service.

* **PROVEN SERVICE** — Some 300 "PAYLOADER" Distributors maintain millions of dollars of parts and service facilities for their customers.

Your "PAYLOADER" Distributor is anxious to prove what a "PAYLOADER" can do for you and help you choose the size and type best suited to your use. See him today or write The Frank G. Hough Co., 710 Sunnyside Ave., Libertyville, Ill.

4-wheel drive "PAYLOADER" backfilling trench



PAYLOADER®
THE FRANK G. HOUGH CO. · LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

(Continued from page 170)

Treatment—sand traps
Storage facilities—elevated tank, 200,000 gallons
Average demand ..... 3.7 mgd
Plant capacity ..... 11.5 mgd

Typical Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.65
5,000	667	1.98
10,000	1,333	3.96

Remarks

1. Company owns all meters; places them in meter box at the lot line.
2. Bills are processed on Burroughs automatic equipment.
3. Rates went into effect November 1953 and represent a 50% increase.

RUDOLPH JENNY, *Manager,*
Rate Department
Pacific Gas & Electric Co.
San Francisco, Calif.

SOUTH SIOUX CITY, NEBR.

Rates Per Quarter

Volume of Water (in gallons)	*Metered Charges* (per 1,000 gallons)
First 15,000	$0.25
Next 35,000	.20
" 50,000	.15
Excess	.10

Miscellaneous Regulations

1. A service charge of $3 per quarter is made for each connection.
2. Commercial houses billed monthly pay a $1 service charge.
3. A penalty of 25 cents is charged for late payment.

General Data

Population served 5,500
Services (100% metered) 1,500
Hydrants 160
Valves 150
Miles of mains 18
Supply—wells
Treatment—chlorination
Storage facilities—elevated tank, 60,000 gallons
Average demand ..... 0.10 mgd
Plant capacity ..... 0.18 mgd

Typical Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
9,000	1,200	$3.25
15,000	2,000	6.75
30,000	4,000	9.75

Remarks

1. City supplies water free to churches.
2. Water department owns the meters; places them in the building occupied by user.
3. Rates have remained unchanged for many years; however, the service charge has been doubled.

HUBERT H. TREADWAY
Superintendent

Inter-American Municipal Organization Officers

AT THE Fifth Inter-American Congress of Municipalities, held in San Juan, Puerto Rico, December 3-7, 1954, the following officers were elected:

President: Dona Felisa Rincon de Gautier, City Manager of San Juan, Puerto Rico; Vice-President: Sr. Miguel A. Ordonez, Mayor of Panama City. Dr. Carlos M. Moran, who has been the devoted Secretary-General since the inception of the Organization in 1938, was re-elected. Additional members of the Executive Committee are the Mayor of Havana, the seat of the headquarters of the Organization; the Mayor of New Orleans, the Hon. de Lesseps S. Morrison; a representative of the Municipality of Montivideo; and the Chairman of the U. S. Committee for International Municipal Cooperation, Herbert Emmerich of Chicago.

Copies of the papers presented at the Congress may be obtained from Dr. Moran, Obispo 351, Havana.

The next Congress is to be in Panama City in February 1956.

LUDLOW
Leadership
Forty, sixty--even ninety years of continuous service furnish the foundation of Ludlow's international reputation. Nine million valves and hydrants by merit of superior performance --- and exceptionally low maintenance--have established the fact that no possible difference in first cost can overbalance the perpetual economy of quality.
TRADE LUDLOW MARK
THE LUDLOW VALVE
ESTB. 1861 MFG • CO • INC • TROY • N • Y •
CANADIAN LUDLOW VALVE MFG. CO., LTD., MONTREAL

POWERS American

presents the

"Sky-

the Ultimate

IN TWO SIZES . . .
for all types of overhead work

SERIES AB-37 has a maximum ground-to-basket floor height of 37′, enabling two men to work 42′ above ground.

SERIES AB-43 carries two men to a comfortable working height of 48′. Maximum ground-to-basket floor height is 43′.

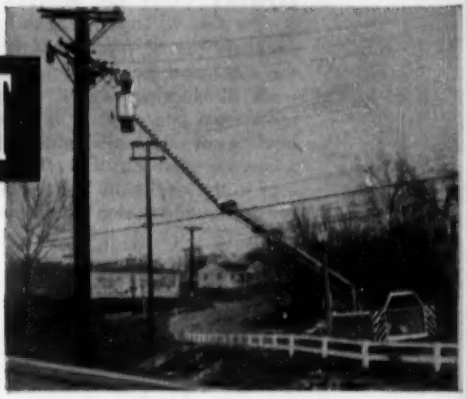
SKY-MASTER can be installed on a Powers-American Body which fits individual operating needs. It can be furnished with an engine-driven air compressor having air lines extended to outlets at work baskets.

POWERS-

McCABE-POWERS

5900 NO. BROADWAY • ST. LOUIS 15, MO.

-Master" in Aerial Equipment



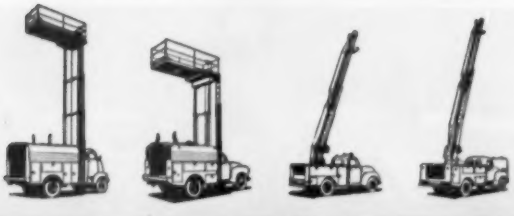
SKY-MASTER consists of a pair of hydraulically-actuated beams and a revolving mast—developed by Powers-American engineers into an aerial unit which is unsurpassed in versatility . . . safety . . . and operating simplicity.

Its inner beam can be positioned anywhere in an 85° arc. Its outer beam—to which twin, reinforced plastic work baskets are attached—moves hydraulically, in combination with drive pulleys and ¾" wire rope—to any point in a 265° arc. The revolving mast will rotate continuously . . . in either direction. An independent control lever for the mast and each beam is installed beside the work baskets.

For operator protection—insulation against 50,000 volts is provided on the outer beam . . . SKY-MASTER automatically locks in any position to which it is moved . . . hydraulic outriggers, on each side of the body, furnish absolute stability . . . constant flow of oil is maintained in cylinders at all times . . . and relief valves prevent overloading.

A complete description of SKY-MASTER'S construction, operation, and safety features is given in Powers-American Bulletin No. 410. A copy, with price information, will be sent—without obligation—upon request.

POWERS-AMERICAN . . .
Your ONE SOURCE for AERIAL EQUIPMENT



AMERICAN DIVISION
AUTO BODY COMPANY
625 CEDAR STREET • BERKELEY 10, CALIF.

HOLMES-OWEN TRUCK LOADERS

SAVING Thousands of Dollars

for MUNICIPAL Users.

LOWERS COST OF WINTER JOBS The City of Lansing, Mich., makes excellent use of Truck Loaders during the snow and ice period to speed up work of clearing streets, removal of snow from intersections, bridges, etc., hauling of stock-pile materials and numerous other jobs that offer Big Savings to the city. Note unit loading salt for distribution during ice control.

Cuts JOB COST as much as 50%

Trucks equipped with Holmes-Owen Loaders are today reducing the cost of many jobs as much as 50% and offering users a savings amounting to thousands of dollars annually. The use of this equipment substantially lowers the cost of material handling. It assures faster, more efficient loading and hauling. Saves time, labor and equipment by permitting the truck driver to LOAD, HAUL and DUMP, do light digging, grading and cleaning-up without additional man power or the use of more costly equipment. The Holmes-Owen Loader can be installed on most 1½ to 2 ton trucks. It is hydraulically operated, lifts one-half yard per bucket, loads the average truck in four minutes and can easily do the work of several men. See your dealer or write factory today for literature and prices.

ERNEST HOLMES COMPANY
Chattanooga Tennessee

SAVES $27,000 ANNUALLY... Two Truck Loaders in Amarillo, Texas reduced a street cleaning crew from 15 to 4 men . . . number of trucks needed from 5 to only 2. Mechanization of this work cut labor cost $27,000 per year, released 3 trucks for other use.

CUTS COST ALMOST 50% . . . Extensive use of a fleet of self-loading trucks in Birmingham, Ala. reduced cost of maintenance on streets, parks and other public properties almost 50%. Mechanization of such work as spreading anti-skid material on icy streets, removal of dumpings from street sweepers, etc. offers additional savings in time, labor and equipment.

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Esthetics and the Police Power

U. S. Supreme Court Holds District of Columbia Redevelopment Act Constitutionally Valid

The American Municipal Association reports, in its WASHINGTON MUNICIPAL NEWS of December 1954, that the highest courts in 18 states have ruled that redevelopment agencies may use the power of eminent domain to acquire blighted areas for resale to private developers, including: Alabama, Arkansas, California, Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, and Wisconsin. In Georgia, voters in the last election approved a constitutional amendment authorizing the exercise of eminent domain for slum clearance.

By ALBERT S. BARD

NOT until courts recognize community beauty as a ground for the exercise of police power by the state or community upon the same basis and as fully as they recognize health, safety, morality, and good order as grounds for such exercise, and as an equal partner with those factors in the term "community welfare," will planning and the law of planning come full circle. That is not quite yet; but the law is on its way and the recent case of *Berman* vs. *Parker* (75 Supreme Court Reporter, p. 98) decided by the United States Supreme Court on November 22, 1954, helps close the gap.

The case holds the District of Columbia Redevelopment Act of 1945 to be constitutionally valid. The statute authorized the carving out from the City of Washington of a considerable area and provided for its replanning and redevelopment with new streets, new zoning regulations, the closing of old streets, etc.—a general new design and new development for the area. The entire area was to be condemned and paid for; thus, as the first step, excluding all existing landowners who, of course, received compensation for their condemned property. The property thus taken included many properties of unexceptionable character, the only excuse for whose taking was that they lay within the area to be redeveloped. Landowners were privileged to repurchase land within the area, even being permitted to repurchase their old property for redevelopment in accordance with the new plan.

The plaintiff, being the owner of certain real estate within the area (business property), asserting that the new plan was a housing plan and a plan for the elimination of slums, and that his business property came up to all the community standards set forth in the redevelopment plan, claimed that his ownership was thus exempt from any attack upon grounds of health, safety, morality, etc., and sought an injunction against the application of the statute to him and against the condemnation of his property.

The United States Supreme Court, however, held that a project for the replanning and redevelopment of a large section of the city is entirely constitutional and that all property within the area is subject to condemnation in order to compel its participation in and contribution to the new development, regardless of the usual grounds for condemnation, viz., health, safety, morality, good order, etc., and that the esthetic considerations, viz., the creation of a pleasanter and more sightly city, is properly a part of the basis for the scheme.

The decision holds that such a plan of redevelopment is itself a public purpose, and that all the property within the area established for the project may be taken and paid for in order to bring the whole area within the plan, regardless of any question of health, safety, morality, good order, etc.

The decision itself does not expressly state that esthetic considerations alone—the making of a pleasanter and more sightly city—will support such legislation, nor that esthetic considerations by themselves will support the regulation of land uses, but the language of the opinion by Mr. Justice Douglas may be claimed to go so far as to support such a case. His language is broad enough to support legislation which replans a city area upon new standards of appearance and beauty, provided only that the new plan is not open to the charge of being arbitrary or discriminatory, and, if it goes so far as to constitute a taking, provides for compensation.

Extracts from the Court's Opinion

The following extracts from Justice Douglas's opinion seem to support such a generalization:

> "Miserable and disreputable housing conditions may do more than spread disease and crime and immorality. They may also suffocate the spirit by reducing the people who live there to the status of cattle. They may indeed make living an almost insufferable burden. They may also be an ugly sore, a blight on the community which robs it of charm, which makes it a place from which men turn. . . . The concept of the public welfare is broad and inclusive. . . . The values it represents are spiritual as well as physical, esthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well balanced as well as carefully patrolled. In the present case, the Congress and its authorized agencies have made determinations that take into account a wide variety of values. It is not for us to reappraise them. If those who govern the District of Columbia decide that the Nation's capital should be beautiful as well as sanitary, there is nothing in the Fifth Amendment that stands in the way. . . . Once the object is within the authority of Congress, the means by which it will be attained is also for Congress to determine. Here one of the means chosen is the use of private enterprise for redevelopment of the area. Appellants argue that this makes the project a taking from one businessman for the benefit of another businessman. But the means of executing the project are for Congress and Congress alone to determine, once the public purpose has been established. . . . The public end may be as well or better served through an agency of private enterprise than through a department of government — or so the Congress might conclude. We cannot say that public ownership is the sole method of promoting the public purposes of community redevelopment projects. What we have said also disposes of any contention concerning the fact that certain property owners in the area may be permitted to repurchase their properties for redevelopment in harmony with the overall plan. That, too, is a legitimate means which Congress and its agencies may adopt, if they choose.
>
> "In the present case, Congress and its authorized agencies attack the problem of the blighted parts of the community on an area rather than on a structure-by-structure basis. That, too, is opposed by appellants. They maintain that since their building does not imperil health or safety nor contribute to the making of a slum or a blighted area, it cannot be swept into a redevelopment plan by the mere dictum of the Planning Commission or the District of Columbia Commissioners. The particular uses to be made of the land in the project were determined with regard to the needs of the particular community. The experts concluded that if the community were to be healthy, if it were not to revert again to a blighted or slum area, as though possessed by a congenital disease, the area must be planned as a whole. It was not enough, they believed, to remove existing buildings that were insanitary or unsight-

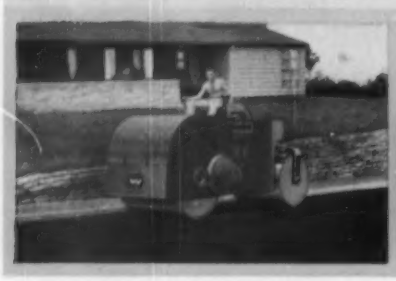
(Continued on page 202)

BECAUSE of the importance of this Supreme Court decision, Mr. Bard's article is replacing the Zoning and Planning Notes this month. Norman Williams' column will appear, as usual, next month.

HUBER—WARCO

HUBER-WARCO Tandem Rollers . . .

have the exclusive Huber-Warco feature of a completely adjustable guide roll assembly that will not scuff. Other features include: a variable speed steering valve that gives any desired feel to the hydraulic steering; all welded construction; two independent braking systems on the medium and large sized tandems and optional fluid coupling meaning less machine wear and less drive roll slippage. Huber-Warco tandems are gasoline or diesel powered.



5-8 and 8-10 Ton Tandems. Both models have been newly designed. Unusually close curb clearance makes these tandems versatile performers.

8-12 and 10-14 Ton Tandems. These machines are built to handle big jobs with smoother, faster operation and provide extra long life.

3-5 Ton Tandem. This small tandem is ideal for driveways, streets, alleys, patching, etc. A rubber-tired trailer for quick transport is available.

5-Ton Retractable Wheel Roller. A full 5-ton tandem, it uses its own power to raise and lower trailing mechanism. Two hydraulic cylinders raise and lower trailing wheels.

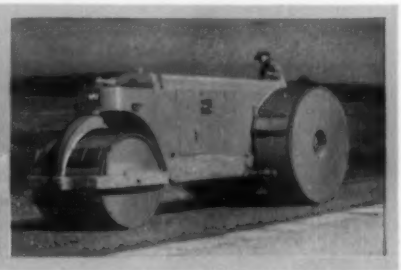
3½-5 Ton Portable Tandem. Movement from job to job is easy with this tandem. Wheels, axle, and hydraulic jacks are provided. Changeover takes only a few minutes.

HUBER-WARCO 3-Wheel Rollers . . .

are built for years of trouble-free service. The low pressure hydraulic steering, powerful high leverage mechanical brakes, all-welded frame construction, low center of gravity enabling the roller to work on sharp side angles, and Huber-Warco's exclusive low pivot point front-end suspension giving longer roller life and stability from walking or twisting, all add up to extra value in a Huber-Warco 3-Wheel Roller. Choice of gasoline or diesel power.

General Purpose. Ranging in size from 5 to 14 tons, these rollers perform in the compaction of earth fills, embankments, subgrades, trenches and insulation courses.

Finishing. Ideal for surface treatment, rolling water bound macadam, sheet asphalt, and other bituminous mixtures, these rollers ranging in size from 5 to 14 tons, are fast and maneuverable.



Variable Weight. Available in 8-10, 10-12 and 12-14 ton models, the Variable Weight 3-Wheel Rollers are the answer for all variable compression.

A COMPLETE LINE OF PROVEN ROAD MACHINERY

HUBER-WARCO Motor Graders . . .

are designed to do every kind of surface grading job economically, speedily and with a minimum of costly "down time" for blade adjustment on the job. Complete hydraulic cab-controlled movement of the blade from 90° elevation on the one side to 90° on the other, eliminates any manual adjustment. Other features include: extra clearance under high arched front axle; mechanical steering with hydraulic booster; 360° blade rotation without removing scarifier teeth. Power sliding moldboard is optional. Units are diesel powered.

4D-75. Blade control from the cab, with no manual adjustments, permits a complete range of bank sloping positions.

4D-85. Truly multi-purpose, Huber-Warco graders can handle a variety of jobs efficiently and dependably.

4D-115. The Huber-Warco blade handles any ditching need . . . rough cut, flat bottom, V-cut . . . wide or narrow.

HUBER-WARCO Maintainers . . .

handle efficiently all grader maintenance jobs. With one machine and attachments 10 jobs can be handled. This 42½ horsepower machine performs as a grader, bulldozer, broom, side dozer, lift-loader, road planer, snow plow, berm leveler, patch roller and mower. Owners credit Huber-Warco's blade-pushing design for a THIRD MORE WORK than conventional pulled blades would produce. Hydraulic controls govern movements of the moldboard and all attachments.

HUBER W WARCO

HUBER-WARCO COMPANY

MARION, OHIO, U. S. A.

Road Machinery

CABLE ADDRESS: HUBARCO

ROAD ROLLERS • MOTOR GRADERS • MAINTAINERS • GRINDERS

The Accident that *DIDN'T* Happen!

A dark, rain-swept night . . . a sharp curve—a side-swiped warning sign twisted dangerously away from oncoming traffic. Add a fast-moving car to this combination, and you have everything needed for a tragic accident. But this accident *didn't* happen!

Why? Because in this case, the vital warning sign was faced with Wide-Angle Flat-Top "Scotchlite" Reflective Sheeting—the only sign material that shows *true color, true shape,* and *true legend* with the same accuracy at night as it does by day . . . in foul weather as well as fair . . . *even when accidental damage or vandalism changes the angle of the face to the roadway.*

Wide-Angle Flat-Top "Scotchlite" Reflective Sheeting shows no significant loss of brightness even under heavy rain conditions; will continue to reflect efficiently even when turned or bent to extreme angles.

Add to these reasons the fact that it is the easiest of all sign materials to maintain. You'll quickly see why so many traffic and maintenance engineers standardize on Wide-Angle Flat-Top "Scotchlite" Reflective Sheeting for their road systems.

We'll be glad to send complete information without cost or obligation. Just write to Dept. AC-25, Minnesota Mining and Mfg. Co., St. Paul 6, Minn.

For true shape ◇ . . . true color ◈ . . . and true legend ↱ . . . by night ↱ as well as by day ↱

REG. U.S. PAT. OFF.

SCOTCHLITE

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REFLECTIVE SHEETING

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3M

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Bus Stops—Common Carriers—Ordinance Establishing Upheld

In action against town to test validity of ordinance reserving strip of street for parking of buses, while discharging or receiving passengers, held that regulation permitting all common carriers the same rights and privileges of parking in strip and also allowing all other motor vehicles to park in said area while loading and unloading merchandise was not unreasonable and discriminatory nor objectionable because it interfered with plaintiff's private business which abuts on said parking strip. *Town of Leesburg* v. *Tavenner*, 82 S. E. (2d) 597 (Va., June 21, 1954).

Contracts—Bids on Election Ballots—Union Label Requirement Invalid

In action against county board of election for declaratory judgment, held that board, required by law to issue contract to lowest responsible bidder, could not stipulate that ballots bear union label and that they be printed by union labor. *John Taylor, Printer, Inc.*, v. *Stacey*, 120 N. E. (2d) 479 (Ohio Comm. Pleas, Columbiana Cty., Feb. 6, 1954).

Intoxication—Arrest in Home While Investigating Traffic Accident—Conviction Upheld

On appeal from conviction for violation of ordinance prohibiting intoxication within the city, held that conviction would be affirmed although the defendant was arrested in his home by officers who had gone there to investigate traffic accident, and although there had been no complaint that defendant was disturbing the peace prior to his arrest. *City of Cleveland* v. *Davey*, 120 N. E. (2d) 454 (Ohio App., Cuyahoga Cty., June 2, 1954).

Licenses—Second-Hand Auto Dealers—Ordinance Without Standards Invalid

Where ordinance enacted pursuant to statute provided that license issued thereunder regulating second-hand automobile dealers would be issued by electors at town meeting assembled and by no other person, but did not designate enforcing officer nor prescribe rules or specifications with which applicant for license must comply to qualify for license, held that ordinance was unreasonable and invalid for lack of standards. *Bloomington Tp.* v. *Grinter*, 119 N. E. (2d) 818 (Ill. App., May 21, 1954).

Loyalty—Dismissal of Teacher for Refusal to Answer Questions on Communism Upheld

Where teacher in public schools of city declined on ground of self-incrimination to answer questions before United States Senate subcommittee inquiring whether he was a member of Communist Party and had engaged in certain Communist activities, held that school committee did not exceed its powers in dismissing teacher after notice, charges and hearing. *Fazon* v. *School Committee of Boston*, 120 N. E. (2d) 772 (Mass., July 1, 1954).

Off-Street Parking Facilities—General Obligation Bonds for Valid—Statute

In action against city to enjoin issuance of general obligation bonds for acquisition of land to be used for off-street parking facilities, held that furnishing of off-street parking facilities is necessary adjunct to right to regulate and control traffic and use of city streets, and that statutes authorizing cities to maintain off-street parking facilities was valid exercise of police power. *Phillips* v. *Officials of City of Valparaiso*, 120 N. E. (2d) 398 (Ind., June 16, 1954).

School Yard—Injury to Student—Maintenance Governmental Function—City Not Liable

In action against city and its board of education for injuries suffered by six-year-old student in fall into unprotected basement stairwell in school yard, held that city board of education, in building and maintaining school yard was engaged in performance of governmental function, and was not liable for its torts or for maintaining a nuisance. *Barnett* v. *City of Memphis*, 269 S. W. (2d) 906 (Tenn., May 21, 1954). *Reh. den.* July 23, 1954.

Sewer Service Charge Upheld Even Though Property Owners Built System

In action against City of Montgomery to have proposed sewer service charges declared invalid, held that even though private owners had built streets and sewers the city could, after accepting dedication of streets, collect service fee for controlling streets and sewers and permitting connection of sewer system with that of city, and that service charge for use of sewer system is not a tax. *Oliver* v. *Water Works and Sanitary Sewer Board*, 73 So. (2d) 552 (Ala., May 27, 1954) *Reh. den.* June 30, 1954.

Sewer Connection Charge Levied Against Subsequently Improved Property Upheld

Where Village of Loveland levied special assessments on tax duplicate valuation basis to meet cost of constructing sewer system, held that ordinance was not invalid which imposed reasonable $5 charge for issuance of connection permits to owners whose subsequently improved property was assessed on its unimproved valuation. *State* v. *Jones*, 119 N. E. (2d) 834 (Ohio, May 12, 1954).

Streets—Railroad Crossing—Order of State Board Requiring Vacation and Barricading Upheld

On appeal by city from order by state board requiring railroad to vacate and barricade its private crossing over its tracks in city because of hazard to public and those using trains, held that board acted within authority given it by statute over property of railroads, and that ordering closing of crossing was proper. *City of Bayonne* v. *Board of Public Utility Com'rs.*, 105 Atl. (2d) 471 (N. J. Super., May 21, 1954).

Subdivisions—Construction of Sewer Line by Company—City Agreement To Pay for Illegal

Where corporation paid total assessment, including cost of outfall line for sewer which was intended to drain land in addition to that of corporation, held that corporation could not recover cost of outfall line from city, and, therefore, city could not compromise and settle corporation's claim for cost of such line. *Garfield Inv. Corp.* v. *City of Enid*, 122 F. Supp. 73 (U. S. D. C., W. D. Okla., May 26, 1954).

Sunday—Ordinance Prohibiting Sale Of Household Electrical Appliances Upheld

On appeal from convictions for violation of ordinance prohibiting opening of stores selling household electrical appliances on Sunday and major holidays, held, in affirming convictions, that city had authority to pass such ordinance either under its power to deal with morality, or under the police power conferred by the home-rule act. *City of Elizabeth* v. *Windsor-Fifth Ave., Inc.*, 106 Atl. (2d) 9 (N. J. Super. App. Div., June 16, 1954).

Taxation—Fraternity House on State-Owned College Campus Subject to Local Taxes

In action by state to enjoin tax collector of Town of Kingstown from collecting personal property taxes on fraternity houses located on state-owned campus of state college, held that houses erected by fraternities upon land owned by college, which had guaranteed construction loan authorized by statute, and which had contracted for fraternity ownership when fully paid for, were property of the fraternities subject to local taxation even though houses were affixed to state-owned realty and could not be sold, mortgaged, or removed without consent of the college. *Powers* v. *Harvey*, 103 Atl. (2d) 551 (R.I., Mar. 19, 1954).

Taxicabs—Suspension of License for Traffic Violations Upheld

In certiorari to review action of City of Providence license bureau in suspending taxicab license, held that suspension of petitioner's license for one week for two traffic violations was supported by evidence. *Capaldo* v. *Scuncio*, 106 Atl. (2d) 727 (R. I., July 29, 1954).

Traffic Signs—Failure to Erect Stop Sign at Through Street As Negligence—City Liable

In action against city for injuries in collision at street intersection, allegedly because stop sign had been missing for many months, held, in affirming judgment against city, that whether city's failure to replace sign at approach which it had designated as a "through street" and on approaches to which it had placed stop signs generally, was negligence, and whether it was proximate cause of collision, were questions for jury. *Buckley* v. *City of Chicago*, 120 N. E. (2d) 375 (Ill. App., June 9, 1954).

"BEST PIECE OF EQUIPMENT ANY CITY COULD OWN"

This Caterpillar HT4 Shovel loads as many as 75 trucks a day with cinders for the streets of Wilkes-Barre, Pa., handles at least a thousand truckloads of heavy shale rock in a year, and in the winter is on the job up to 18 hours a day removing snow. No wonder George T. Smith, city superintendent of streets, says of this versatile and hard-working CAT* HT4 Shovel: "It's the best piece of equipment any city could own. We're extremely pleased with its performance, and with our other Cat-built machines."

The HT4 Shovel is designed as a unit, with the weight of the bucket distributed along the full length of the tracks. It can handle a lot of work *fast*, because even with its 1¼-yd. bucket fully loaded, the machine will not "dance."

This even distribution of stresses is one reason for the HT4's long work life. Another reason for its low upkeep and high trade-in is the careful design of the engine and hydraulic system seals. They're engineered to keep oil and lubricants *in* and harmful grit *out*.

Wilkes-Barre's association with Caterpillar products goes 'way back: the city also owns a durable No. 10 Auto Patrol and No. 212 Motor Grader. Many cities have found that it pays to standardize on money-saving Cat equipment for ease of maintenance, operator familiarity, and simplified parts inventory.

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City Manager Appointments & News

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

William F. Wilson
Vassar, Mich.

Walter C. Brown
Glendale, Calif.

Wallace R. Bennett
Oak Hill, W. Va.

Frank K. Dawson
Yuba City, Calif.

Benjamin H. Mead, Jr.
Laguna Beach, Calif.

KARA L. COOPER was appointed city manager of Lake Jackson, Texas, succeeding John Elder (deceased).

Malartic, Quebec, has appointed M. VICTOR DUBRULE, mayor of Ville-Marie, Que., to succeed Roland Bourgault as city manager.

STEPHEN A. FLIS, manager of Lancaster, N. H., was appointed city manager of Farmington, Conn., succeeding Robert D. Heitsch.

San Bruno, Calif., appointed the public works director of Palm Springs, JOHN C. KEEFE, to succeed C. L. White as city manager.

The former manager of Dalhart, Texas, ERNEST F. LEE, was appointed city manager of West Columbia, Texas, succeeding J. R. Garrett.

MARVIN W. LEE, assistant to the manager at Norfolk, Va., was appointed city manager of South Boston, Va., succeeding Douglas G. Welford.

Rome, N. Y., has appointed ROBERT H. MCMANUS, executive secretary to the manager at Hartford, Conn., to succeed Leslie R. Rudd as city manager.

The first manager of Gulfport, Fla., is AARON MARSH, the assistant manager at Alexandria, Va.

RICHARD R. MOORE, the water-works superintendent, was appointed city manager of Sharpsville, Pa., succeeding Charles Boyce.

The first manager of Mountlake Terrace, Wash., is EVAN E. PETERSON, city manager of Bellevue, Wash.

Hillsborough, Calif., appointed the city engineer of San Mateo, NORMAN STIENE, to succeed E. P. Wilsey as city manager.

GLENN E. VARENHORST, assistant to the manager at Rock Island, Ill., was appointed city manager of Hays, Kans., succeeding B. J. Brungardt.

Kettering, Ohio, appointed ERVIN L. WELCH, city manager of Mansfield, Mass., as the first city manager.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association

'54 Saw 63 New Council-Manager Places

THE CITY MANAGERS' *News Letter* of January 1, 1955, reports that 63 cities and towns were added to the number of council manager places in 1954, making a total of 1,273 council-manager municipalities at the end of the year. The 1954 additions were:

Alabama
  Prattville
Arizona
  Casa Grande, Miami, Tempe
California
  Beverly Hills
  Laguna Beach, San Clemente, Sanger, Seal Beach, Tracy, Vacaville
Delaware
  Newark
Florida
  Apalachicola, Belle Glade, Gulfport, Polk City
Georgia
  Elberton
Illinois
  Arlington Heights, Elgin, Joliet, Highland Park
Maine
  Bethel
  Orrington Town, Rockport
Massachusetts
  Randolph
Michigan
  Clare, Mt. Clemens, Walled Lake
Minnesota
  Edina, St. Louis Park
Missouri
  Ferguson, Joplin, Webster Groves
Montana
  Missoula
Nevada
  North Las Vegas
New Hampshire
  Hampton
New Jersey
  Cedar Grove Township
New Mexico
  Santa Fe
New York
  Monticello, Pleasantville
Oklahoma
  Altus, Broken Arrow, Claremore, Okmulgee, Ponca City
Oregon
  Medford
Pennsylvania
  Baldwin Borough, Camp Hill Borough, McCandless Township, Mifflinburg, Narberth Borough
Rhode Island — East Providence, North Kingston
Texas
  Breckenridge, Brownfield, Cleveland, Commerce, El Campo, Monahans, Orange, Tulia
Washington
  Kennewick, Mountlake Terrace.

City Gives Residents Unique Christmas Gift

CUSTOMERS of the city-owned power plant in Sikeston, Mo., received an unusual Christmas present from the city during December. Because of high profits at the plant during the first 11 months of 1954, the City Council of Sikeston decided to give all residential customers free power for the month of December. Industrial customers of the plant received a 3% discount on their bills. The value of the power that formed the unique city Christmas gift was estimated to have amounted to $35,000.

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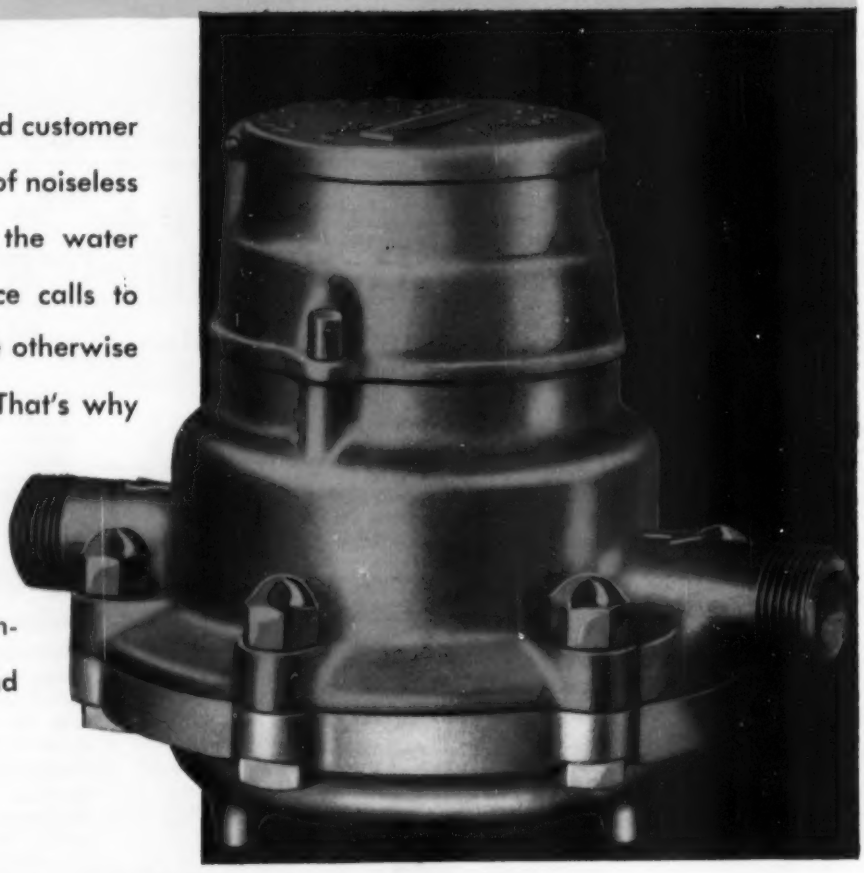

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Feb. 7-9—New Orleans, La.
ASSOCIATION OF ASPHALT PAVING TECHNOLOGISTS. Annual Meeting (Jung Hotel). Sec.-Treas., W. K. Parr, Box 376, Ann Arbor, Mich.

***Feb. 7-12—San Diego, Calif.**
AMERICAN SOCIETY OF CIVIL ENGINEERS. National Convention (U. S. Grant Hotel). Sec., William Carey, 33 W. 39th St., New York 18, N. Y.

Feb. 8-10—Buffalo, N. Y.
ASSOCIATION OF TOWNS OF THE STATE OF NEW YORK. Annual Meeting (Hotel Statler). Exec. Sec., Edw. F. N. Uthe, 91 State St., Albany, N. Y.

Feb. 9-11—Indianapolis, Ind.
AMERICAN WATER WORKS ASSOCIATION—Indiana Section. Annual Meeting (Lincoln Hotel). Sec.-Treas., Robert J. Becker, 113 Monument Circle, Indianapolis, Ind.

Feb. 17-18—Columbus, Ohio
OHIO WATER CLINIC. Annual Conference (Ohio State University). For information address Kenneth W. Cosens, Clinic Director, Civil Engineering Department, The Ohio State University, Columbus 10, Ohio.

Feb. 22-25—Sacramento, Calif.
CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION. Annual Meeting (Hotel Senator). Sec., F. V. Frey, Room 108, City Hall, 100 N. Garfield, Pasadena, Calif.

March 2-4—Atlantic City, N. J.
ASSOCIATION OF HIGHWAY OFFICIALS OF THE NORTH ATLANTIC STATES. Annual Convention (Hotel Traymore). Sec.-Treas., A. Lee Grover, 1035 Parkway Ave., Trenton, N. J.

***March 3-4—Cleveland, Ohio**
STREET TREE AND UTILITY CONFERENCE. (Wade Park Manor Hotel.) For information address Edward H. Scanlon, Box 5, Olmsted Falls, Ohio.

March 6-11—College Station, Texas
TEXAS WATER AND SEWAGE WORKS ASSOCIATION. Annual Meeting (Texas A & M College). Sec., V. M. Ehlers, Texas State Department of Health, Austin, Texas.

March 7-11—Washington, D. C.
AMERICAN CONGRESS ON SURVEYING AND MAPPING—Jointly with the AMERICAN SOCIETY OF PHOTOGRAMMETRY. Annual Meeting (Hotel Shoreham). For information, address either Walter S. Dix, Sec. of ACSM, P. O. Box 470, Ben Franklin Station, Washington, D. C., or C. Earl Palmer, Sec. of ASP, 1000 11th St. NW., Washington 1, D. C.

March 9-11—Atlantic City, N. J.
NEW JERSEY MOSQUITO EXTERMINATION ASSOCIATION. Annual Meeting (Hotel Chalfonte-Haddon Hall). Sec., Bailey B. Pepper, c/o Agricultural Experiment Station, New Brunswick, N. J.

March 9-11—Boston, Mass.
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Convention (Sheraton Plaza Hotel). Managing Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago 1, Ill.

March 14-17—New Orleans, La.
ASSOCIATED GENERAL CONTRACTORS. Annual Convention (Hotel Roosevelt). Managing Dir., H. E. Foreman, 1227 Munsey Bldg., Washington 4, D. C.

***March 16-18—Baton Rouge, La.**
ANNUAL SHORT COURSE FOR WATER AND SEWAGE PERSONNEL (Louisiana State University). For information address John O'Neill, Director, Division of Public Health Engineering, Department of Health, New Orleans, La.

March 21-23—Fayetteville, Ark.
ARKANSAS WATER AND SEWAGE CONFERENCE. (Mountain Inn.) Sec.-Treas., Harrison Hale, Southern State College, Magnolia, Ark.

March 21-23—Savannah, Ga.
AMERICAN WATER WORKS ASSOCIATION—Southeastern Section. Annual Meeting (DeSoto Hotel). Exec. Sec., N. M. de Jarnette, Georgia Department of Public Health, 245 State Office Bldg., Atlanta, Ga.

March 30-April 2—Kansas City, Mo.
AMERICAN INSTITUTE OF PLANNERS. Annual Meeting (Muehlebach Hotel). Exec. Dir., P. L. Norton, 34 Brattle St., Cambridge 38, Mass.

March 31-April 1—Durham, N. C.
SOUTHERN MUNICIPAL AND INDUSTRIAL WASTE CONFERENCE. (College of Engineering, Duke University). For information address J. W. Williams, Acting Head, Department of Civil Engineering, College of Engineering, Duke University, Durham, N. C.

April 4-8—Amherst, Mass.
ADVANCED SEWAGE TREATMENT WORKS OPERATORS' SHORT COURSE. (N. E. Field Training Center). Exec. Sec., N. G. Kitson, Director of Environmental Sanitation, Room 543, State House, Boston, Mass.

***April 4-8—New York, N. Y.**
AMERICAN FILM ASSEMBLY (Waldorf-Astoria Hotel). For information address the American Film Assembly, Film Council of America, 600 Davis St., Evanston, Ill. (See page 200 of this issue.)

April 11-14—Lafayette, Ind.
PURDUE ROAD SCHOOL. (Union Building, Purdue University.) Exec. Sec., Ben H. Petty, Professor of Highway Engineering, Purdue University, CE Bldg., Lafayette, Ind.

April 13-15—Hutchinson, Kans.
AMERICAN WATER WORKS ASSOCIATION—Kansas Section. Annual Meeting (Baker Hotel). Sec.-Treas., Harry W. Badley, 119 W. Cloud St., Salina, Kans.

April 13-15—Lincoln, Nebr.
AMERICAN WATER WORKS ASSOCIATION—Nebraska Section. Annual Meeting (Cornhusker Hotel). Sec., E. Bruce Meier, Asst. Prof. of Civil Engineering, University of Nebraska, Lincoln, Nebr.

***April 13-15—New York, N. Y.**
CONFERENCE ON BIOLOGICAL WASTE TREATMENT, ITS PRINCIPLES AND APPLICATIONS. (Manhattan College). For information address W. W. Eckenfelder, Asst. Prof., Department of Civil Engineering, Manhattan College, New York 71, N. Y.

April 14-15—Miami, Fla.
AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION. Annual Meeting. Sec.-Treas., Peter J. Cannon, 1060 Broad St., Newark, N. J.

April 14-16—Chandler, Ariz.
AMERICAN WATER WORKS ASSOCIATION—Arizona Section. Annual Meeting (San Marcos Hotel). Exec. Sec., Quentin Mees, 721 N. Olsen St., Tucson, Ariz.

April 18-20—Quebec City, Que.
AMERICAN WATER WORKS ASSOCIATION—Canadian Section. Annual Meeting (Chateau Frontenac). Sec., A. E. Berry, Director, Ontario Department of Health, Parliament Bldgs., Toronto 8, Ont.

April 20-22—Buffalo, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Meeting (Hotel Statler). Sec., Kimball Blanchard, Rensselaer Valve Company, 56 Grand St., White Plains, N. Y.

April 21-23—Alexandria, La.
LOUISIANA MUNICIPAL ASSOCIATION. Annual Meeting (Hotel Bentley). Sec.-Treas., Mrs. Douglas M. Warriner, 538 Raymond Bldg., Baton Rouge, La.

April 24-28—Seattle, Wash.
AIRPORT OPERATORS COUNCIL. Annual Meeting (Hotel Olympic). Exec. Sec., Robert C. Mayer, 1625 K St. NW., Washington 6, D. C.

April 28—Butte, Mont.
MONTANA SEWAGE WORKS ASSOCIATION. Annual Meeting (Finlen Hotel). Exec. Sec., H. W. Taylor, 910 Helena Ave., Helena, Mont.

April 29-30—Butte, Mont.
AMERICAN WATER WORKS ASSOCIATION—Montana Section. Annual Meeting (Finlen Hotel). Sec., A. W. Clarkson, Acting Chief, Water Section, Division of Environmental Sanitation, State Board of Health, Helena, Mont.

May 1-5—New Orleans, La.
MUNICIPAL FINANCE OFFICERS ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Conference (Jung Hotel). Exec. Dir., Joseph F. Clark, 1313 E. 60th St., Chicago 37, Ill.

May 2-4—Washington, D. C.
CHAMBER OF COMMERCE OF THE U. S. Annual Meeting (National Chamber Building). Exec. Vice-Pres., Arch N. Booth, 1615 H St. NW., Washington 6, D. C.

***May 3-5—Jacksonville, Fla.**
AMERICAN PUBLIC POWER ASSOCIATION. Annual Meeting (Hotel George Washington). Gen. Mgr., Alex Radin, 1757 K St. NW., Washington 6, D. C.

***May 4-6—Pittsburgh, Pa.**
AMERICAN WATER WORKS ASSOCIATION—Pennsylvania Section. Annual Meeting (Webster Hall). Sec.-Treas., L. S. Morgan, Division of Engineering, 415 First National Bank Bldg., Greensburg, Pa.

***May 8-10—Washington, D. C.**
NATIONAL HIGHWAY USERS CONFERENCE. Biennial Meeting (Mayflower Hotel). Dir., Arthur C. Butler, 966 National Press Bldg., Washington, D. C.

***May 9-11—Lafayette, Ind.**
INDUSTRIAL WASTE UTILIZATION CONFERENCE (Purdue Union Club). Exec. Sec., Don. E. Bloodgood, Professor of Sanitary Engineering, CE Bldg., Purdue University.

May 16-20—Cincinnati, Ohio
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting (Netherlands-Plaza Hotel). Exec. Sec., Charles S. Morgan, 60 Batterymarch St., Boston, Mass.

May 17-20—Chicago, Ill.
NATIONAL INSTITUTE OF MUNICIPAL CLERKS. Annual Meeting (LaSalle Hotel). Pres., Arthur J. Shinners, Town Hall, Brookline, Mass.

May 19-21—New York, N. Y.
UNITED STATES CONFERENCE OF MAYORS. Annual Conference (The Waldorf-Astoria). Exec. Dir., Paul V. Betters, 730 Jackson Pl. NW., Washington 6, D. C.

***May 19-21—Yakima, Wash.**
AMERICAN WATER WORKS ASSOCIATION—Pacific Northwest Section. Annual Meeting (Hotel Chinook). Sec., Fred D. Jones, District Supervisor, Room 305, City Hall, Spokane, Wash.

***May 22-25—Detroit, Mich.**
AIR POLLUTION CONTROL ASSOCIATION. Annual Meeting (Sheraton-Cadillac Hotel). Exec. Sec., H. C. Ballman, 4400 Fifth Ave., Pittsburgh 13, Pa.

(Continued on page 201)

Oliver "OC-12" with hydraulic 1-yd. loader. This model has the long track frame for added stability. Loader has exceptional bucket rotation and 10' 4" loading height.

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It's a rugged, eager worker in the 45 drawbar h.p. class that features advancements in power, economy and operating ease to make every job more profitable.

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The smooth lines of this unit show it is made for easy access and operator visibility. Controls are right where they're the handiest. Down to the key-lock switch, foam rubber seat, overhead-linkage clutch, this tractor caters to operator convenience.

Your Oliver Industrial Distributor will be glad to demonstrate the "OC-12." Give him a call.

The "OC-12" is available in two track widths: 44- and 60-inch—and two track lengths, one with four lower track wheels and one with five. Standard grousers are 14-inch.

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Municipal & Civic Publications

Water Fluoridation and Dental Health

FLUORIDATION AS A PUBLIC HEALTH MEASURE—*American Association for the Advancement of Science*, 1515 *Massachusetts Ave. NW., Washington* 5, *D. C. James H. Shaw, Editor*. 232 *pp.* $8.

Fluoridation, probably the most talked-about and written-about phase of water treatment because of its singular ability to reduce tooth decay, assumes further dignity and authority as a book sponsored by a responsible scientific group. Editor Shaw prefers to class the work as a "monograph," but to the rest of us, it looks, reads, and feels like a book.

It represents the combined efforts of a series of authorities who analyze different phases of the subject. Try as these experts do, they can conclude only that the partial prevention of dental caries by water-borne fluorides is now a demonstrated fact, that it is a practical operation, and that it produces no harmful effects on the body. It is a helpful text, or monograph if you prefer, to have handy when the subject of fluoridation arises.

How to Plan and Develop An Industrial District

ORGANIZED INDUSTRIAL DISTRICTS — *A Tool for Community Development. By Theodore K. Pasma. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington* 25, *D. C. June* 1954. 111 *pp.* 65 *cents.*

The increasing trend of industries to locate in the suburban or fringe areas surrounding central cities has created a mounting interest in planned industrial districts. This excellent and very complete guide to the techniques of planning, building, and operating such districts will be of special interest to city and town officials who wish to encourage industrial development in their communities.

Beginning with a survey of the advantages that planned industrial districts have to both industry and municipalities, the booklet describes such factors as methods of fitting a district into a community plan, the types of organizations utilized to establish industrial districts, and the costs and financing of districts.

Other topics discussed are the methods of selecting and acquiring tracts, designing the tract layout, and improving the tract, the kinds of professional services to use in developing the tract, and the methods of promoting the district. Examples of existing industrial districts throughout the United States are used to illustrate the techniques described in the text.

Citizens' Handbook to Advance Community Betterment

PLANNING BETTER COMMUNITIES IN THE METROPOLITAN ST. LOUIS AREA — *By W. Philip Shatts. Metropolitan Plan Association, Inc.*, 915 *Olive St., St. Louis* 1, *Mo. November* 1954. 31 *pp.*

The two main purposes of this practical citizens' handbook are: to promote a better understanding of community planning as it affects municipal, county, and metropolitan development; and to provide a method of operation whereby public-spirited citizens will be encouraged to work together and with their municipal officials in advancing coordinated programs for public improvement.

How to Regulate Gas Stations

REGULATION OF FILLING STATIONS—*Information Report No.* 37. *Planning Advisory Service, American Society of Planning Officials*, 1313 *E. 60th St., Chicago* 37, *Ill. October* 1954. 34 *pp. Available only to subscribers to Service.*

This report describes the features of modern filling stations that have made regulation of them necessary. The report also discusses the legal tools that can be used to regulate them, and it lists specific steps taken by more than 50 U. S. communities to control objectionable aspects of gas stations. The report suggests that courts might be more lenient in dealing with gas station regulations if based on sound traffic considerations or on site improvement or curb-cut factors that would tend to reduce congestion at heavily traveled intersections.

How to Plan an Outdoor Swimming Pool

OUTDOOR SWIMMING POOLS — PART I — *By George D. Butler.* Recreation, *January* 1955. *National Recreation Association*, 315 *Fourth Ave., New York* 10, *N. Y.*

George Butler, who is a well known and popular writer on practical recreation matters, has begun a series of three articles on swimming pools in the magazine, *Recreation*. The first article discusses considerations in planning outdoor pools. Points covered in the article include site selection, size of pool, estimating pool capacity, as well as the methods of initiating a pool project in a community. The second article of the series is appearing in the February issue of *Recreation*.

Think Before You Build

LET'S PLAN OUR CITIES BEFORE IT'S TOO LATE—*By Albert Mayer. — Published in the November* 18, 1954 *issue of* THE REPORTER, 220 *East* 42*nd St., New York* 17, *N. Y.* 4 *pp. Copy of this issue of* THE REPORTER *available at* 25 *cents.*

Albert Mayer makes a strong plea for imaginative architecture, for the implementation of the new techniques of the regional-urban plan, and for really adequate traffic and utility control. He urges that we strive toward the New Town concept being carried out in England, which he considers a "workable and exciting alternative to the dreary prospect of urban and suburban growth by uncontrolled accretion and sprawl."

Planning and Zoning in New York State

LOCAL PLANNING AND ZONING — *New York State Department of Commerce*, 112 *State St., Albany* 7, *N. Y.* 1954. 90 *pp.*

This is the latest edition of the popular New York State manual on planning and zoning powers and procedures. Designed to be read by both citizens and governmental officials, the manual has been revised to include the latest amendments and revisions in the planning and zoning enabling acts that were passed in 1954 by the State Legislature. The booklet preserves its previous format and contains chapters on planning by cities, towns, and villages; county and regional planning; zoning by cities, towns, and villages; building restrictions; and airports and their approaches. Extensive appendices contain the texts of the state enabling acts pertaining to planning and zoning.

Model Refuse Collection Ordinance

MODEL MUNICIPAL REFUSE COLLECTION SYSTEM ORDINANCE — *National Institute of Municipal Law Officers*, 726 *Jackson Pl. NW., Washington* 6, *D. C.* 1954. 7 *pp.*

This ordinance—the latest in a continuing series of model ordinances — provides for the establishment of a municipal service for collecting and disposing of garbage, rubbish, and ashes accumulated in a city or town. It prescribes regulations for the storage and collection of refuse, provides for a charge of fees for the collection and disposal, and prescribes penalties for violations of the provisions of the ordinance. A minor question that could be raised about this ordinance is the rather arbitrary placement of the responsibility of refuse collection in the hands of a city highway director. Despite this criticism, this model ordinance should be of great practical aid to city officials.

Crime in Cities

WHAT CRIME WAVE?—*By Daniel Bell.* Fortune, *January* 1955. 9 *Rockefeller Plaza, New York* 20, *N. Y.*

Organized crime represented by racketeering in gambling and horserace betting is on the wane, according to this article, which questions whether the crime wave that alarmed many city dwellers in 1954 was so bad after all. The work of the Kefauver hearings in airing racketeering activities evidently served an important purpose, for in city after city cited by Mr. Bell, organized crime has been reduced. Individual crime, especially by teen-agers and delinquents, is up, however, and in this connection Mr. Bell has many interesting points to make on the reasons why youthful crime is rampant.

How to Crack Down On Vice

POLICE DEPARTMENT SUPPRESSION OF VICE CONDITIONS — *Management Information Service Report* 131. *International City Managers' Association*, 1313 *E. 60th St., Chicago* 37, *Ill. December* 1954. 9 *pp. Available only to subscribers to Service.*

Here is a practical report on the methods of attacking organized vice in cities and towns. Questions of the best enforcement methods for suppressing commercialized vice, the best place in the police department for a vice squad and intelligence unit, and the use of undercover agents and paid informers—all of these and many other pertinent points are covered in the report.

To Better Municipal Public Relations

HOW TO MEET THE PUBLIC—*Adapted by the Publications Office, City and County of Denver, Colo., from "Our Civic Staff and Public Relations," published by New Westminster, B. C. Distributed by Budget and Personnel Office, Denver*, 1954. 17 *pp.*

The employees of Denver, Colo., are given hints in this booklet on how to get along with each other and with the public. The suggestions are presented in readable form,* and illustrated with cartoons.

* See page 147 of this issue.

A NEW LEECE-NEVILLE ALTERNATOR SYSTEM THAT ACTUALLY COSTS LESS THAN "EXTRA" OUTPUT D. C. GENERATORS!

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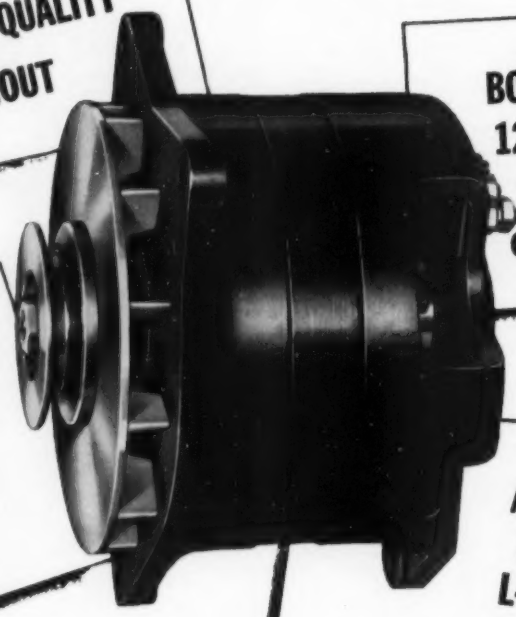

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Integrating New, Large Industries Into Life of Community

COMMUNITY RELATIONS — *A Summer Seminar for Practitioners. Wayne L. Hodges, Professor in Charge. New York State School of Industrial and Labor Relations, Cornell University, Ithaca, N. Y. July* 1954. 58 *pp.*

The methods of integrating large industrial organizations into the day-to-day life of communities are explored in this summary of a one-week seminar on community relations held at Cornell University in July 1954. The techniques employed by organizations such as the Caterpillar Tractor Company, the General Foods Company, and the General Electric Company are explained in digests of the prepared talks and subsequent discussions by the participants.

How the various organizations utilized such public relations methods as encouraging employees to participate in municipal affairs, holding open-house tours of manufacturing facilities, maintaining close contacts with local press, radio and television personnel, etc., is explained.

Preparing and Using Organization Charts

ORGANIZATION CHARTING — *Information Report No. 69. Planning Advisory Service, American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill. December* 1954. 9 *pp., and accompanying charts. Available only to subscribers to Service.*

This report analyzes the theory and techniques of preparing and using organization charts, showing the lines of responsibility among personnel and departments in planning agencies. This is a topic that will appeal to officials in cities where there is a substantial body of personnel requiring a careful definition of responsibilities, duties, and work procedures. Types of charts are discussed as well as some "do's" and "don'ts" for charting. Excellent examples of charts showing the organization of various planning agencies throughout the country are also presented.

Prestressed Concrete

PRESTRESSED CONCRETE, Third Edition—*By Gustave Magnel, McGraw-Hill Book Company, 330 W. 42nd St., New York 36, N. Y.* 345 *pp.* $8.

Professor Magnel, of the University of Ghent, Belgium, one of the world's leading authorities in this exciting, relatively new phase of structural engineering, brings his textbook up to date in his new third edition. This book does not change the basic information presented previously, but it does add supplemental information based on recent prestressed concrete work that gives the engineer greater confidence in this type of construction.

New Pension System for Public Employees

NEW JERSEY LEADS THE WAY—*By Anthony S. Gadek. Published in the December* 1954 *issue of* THE COUNTY OFFICER, *1616 Eye St. NW., Washington 6, D. C. 2½ pp.; single copy of magazine 35 cents.*

This article discusses New Jersey's new law which integrates federal social security with the state retirement system for employees of state and local government units, and which provides broader benefits for those public employees enrolled in the previously existing pension system. New Jersey's new system providing benefits for retirement, death, and disability is among the most liberal in the United States.

Business District Study

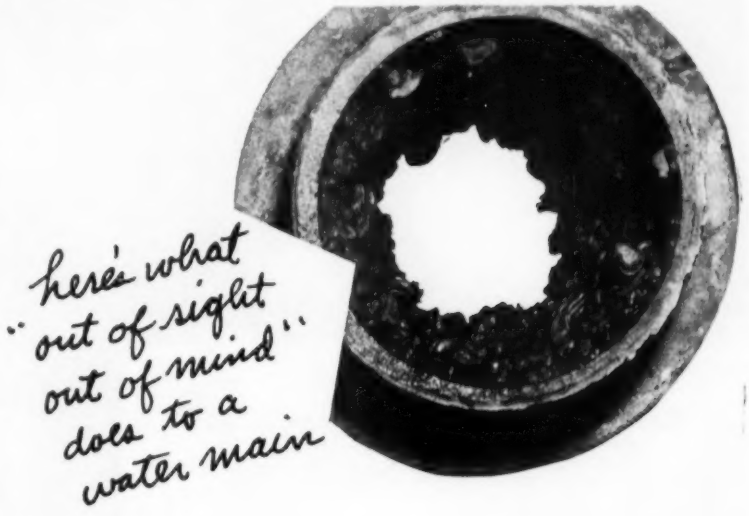
A COMPARATIVE STUDY OF NINE CENTRAL BUSINESS DISTRICTS — *By Raymond E. Murphy and J. E. Vance, Jr.* Economic Geography, *950 Main St., Worcester, Mass. October* 1954.

This is the second of three articles dealing with the characteristics of central business districts in nine moderate-sized metropolitan areas in the United States. The article deals with the relationship of the layout, size, and physical features of the business districts to the character and size of the metropolitan area. One of the interesting results of the study shows that the number of employees in commercial activities as reported by the Census can be used to estimate the total central business space in such centers. The third of the series appears in the January issue of *Economic Geography.*

How Far Do People Travel to Work?

THE SEPARATION OF HOME AND WORK IN FLINT, MICH.—*By Leo F. Schnore. Social Science Research Project, Institute for Human Adjustment, University of Michigan, Ann Arbor, Mich. June* 1954. 53 *pp.* $1.

Here is a study that throws some light on the distances that separate the homes of employees from their places of work in Flint, Mich. The study uncovers and defines many of the complex and interesting factors that determine the distance relationships between work and home. It should be helpful to officials in other communities faced with problems of rapid population growth occasioned by the establishment of large, new industrial and commercial plants or offices within their boundaries.



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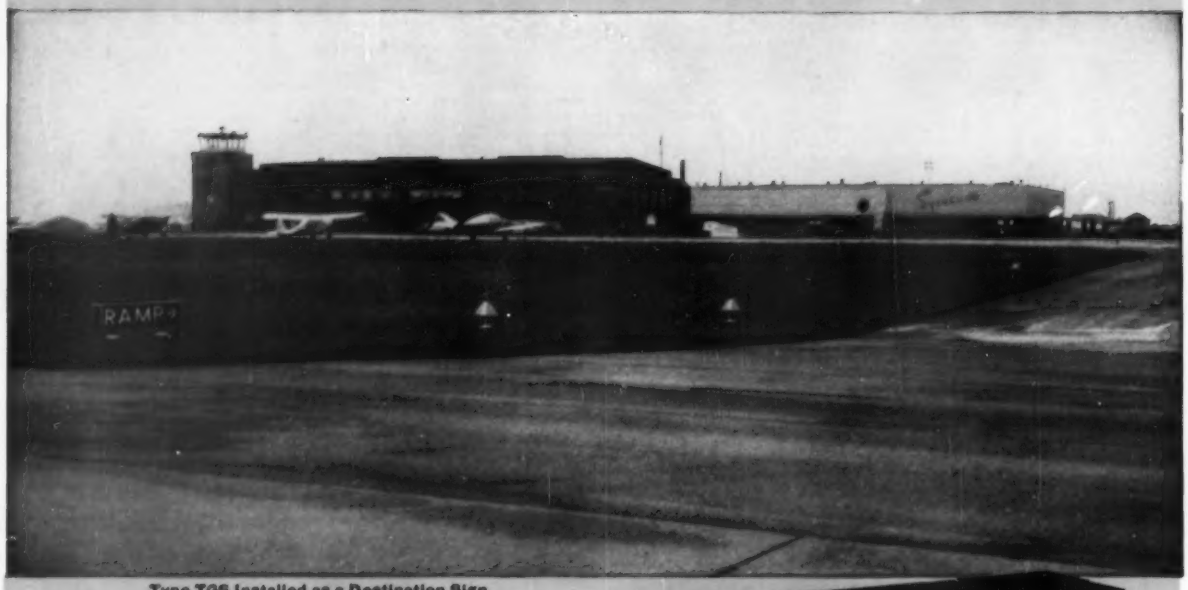

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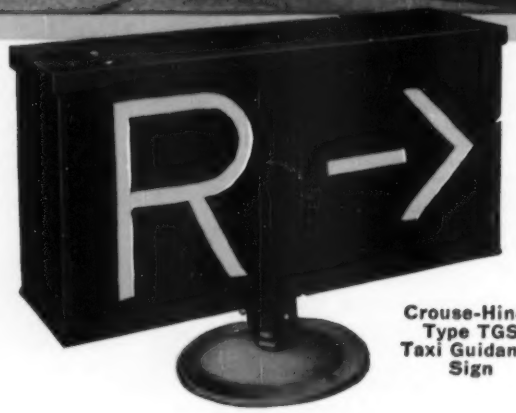

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Useful Summary of 1954 Housing Act

SUMMARY OF HIGHLIGHTS OF HOUSING ACT OF 1954—*By John J. Kassner, Partner, and Jay F. Krakauer, Associate, John J. Kassner & Co., Consulting Engineers, 111 Broadway, New York 6, N. Y. December 1954. 4 pp. Free.*

This is a concise and useful summary of the provisions of the National Housing Act of 1954 relating to urban planning, slum clearance, urban renewal, and low-rent public housing. As in the case of virtually every piece of legislation, it is always handy to have an easy-to-read check list of the important provisions of a new act so that essential points can be referred to quickly without having to plow through endless but legally correct sentences. This is a good example of such a check list. The summary also contains a list of the requirements for a "workable program" for eliminating and preventing urban slums and blight.

Candid Review of Good and Bad Housing Design

HOUSING DESIGN—*By Eugene Henry Klaber, Reinhold Publishing Corporation, 430 Park Ave., New York 22, N. Y. 1954. 247 pp. $8.50.*

Housing officials, architects, planners, and students will find this candid presentation of the good and bad in housing design a most welcome addition to housing literature. Mr. Klaber's background in city planning as well as his wide experience in housing design have been combined to excellent advantage in the writing of this fine book.

All of the raw materials of design are discussed and illustrated profusely with drawings of existing projects prepared especially for the book by Mr. Klaber. The problems of circulation within apartments and of access to and from apartment units are but two of the many building design considerations that are deftly analyzed with examples of good methods of solving these problems. Factors of site design, including site selection, orientation, topography, community facilities, and parking and garages, are fully discussed and illustrated.

Shopping Center Bibliography

SHOPPING CENTERS AND THEIR EFFECT ON URBAN REDEVELOPMENT — *Sept.-Nov. 1954 issue of* BUSINESS INFORMATION SOURCES, *the Bulletin of the Business Information Bureau, Cleveland Public Library, Cleveland, Ohio. 4 pp. Single issue 25 cents; subscription, $1.*

This selected list of reference books, periodicals, and special reports covers the following topics: Shopping centers—what are they and where are they? Planning the shopping center. The Impact of the shopping center. Are shopping centers failing? The old and the new.

Citizen Advisory Committees

USE OF CITIZEN ADVISORY COMMITTEES—*Report No. 130. November 1954. 14 pp. Published by the International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill. Available to subscribers for this Service.*

Based on the experience of 26 cities of varying sizes, this report discusses special citizen committees appointed to advise the city council or chief administrator on specific problems, and draws conclusions as to their use and effectiveness.

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Workable Program for Urban Renewal

WORKABLE PROGRAM OF THE CITY OF CHICAGO—*Housing and Redevelopment Coordinator, City of Chicago, 69 W. Washington St., Chicago 2, Ill. November 1954. 59 pp. plus 6-page supplement.*

Officials in cities and towns that are contemplating or are now preparing their own "workable programs" for the elimination of slums and blighted areas and for the prevention of the spread of such areas, will find this document of interest. It presents a detailed explanation of all of the evidence accumulated by Chicago officials showing that the nation's second largest city meets federal requirements for a "workable program." The form of this statement follows the outline given in the circular of the HHFA entitled, "All Localities Can Develop a Workable Program for Urban Renewal."

Public Buildings and Other Examples of Good Architecture

A DECADE OF CONTEMPORARY ACHITECTURE—*By S. Giedion. George Wittenborn, Inc., 38 E. 57th St., New York 22, N. Y. 1954. 271 pp. $9.50.*

This is the second edition of a survey of architectural work produced in the period 1937-47 by leading designers in 23 countries. The study also presents a summary of the work of the first postwar meeting of the International Congress of Modern Architecture (CIAM) held at Bridgewater, England, in 1947.

Among the building types covered in this well-illustrated volume are public buildings, schools, hospitals, apartment structures, single-family houses, and industrial buildings. A representative group of city-planning projects for areas as widespread as Argentine, Czechoslovakia, England, Algeria, and the United States are included. The second edition presents 40 new pages of material containing sketches of architectural and planning work produced between 1947 and 1954.

Background Data on Civic Centers

ALBUQUERQUE CIVIC CENTER. Report No. 1, Preliminary Analysis—*By F. B. Blandford, Jr., Associate Planner, City Planning Commission, Albuquerque, N. M. August 1954. 41 pp. plus supplement.*

To form a background for discussions on a proposed civic center for Albuquerque, the local planning department has scoured the country for pertinent material and has gathered it together in this report. This is not a definitive study on civic centers in general, but it should make worthwhile perusing for any official who wants to know what some of the leaders in city planning thought have to say about location, transportation, parking, and other factors related to civic centers. Specific analyses of civic centers in Long Beach and Santa Clara, Calif., and in Dayton, Ohio, are presented.

New Kentucky Municipal Bulletin

THE KENTUCKY CITY BULLETIN—Vol. I, No. 1—*Published monthly by The Kentucky Municipal League, McVey Hall, University of Kentucky, Lexington, Ky. December 1954. 4 pp.*

The new bulletin is issued in lieu of the quarterly, *Kentucky City*, which is being discontinued after 25 years of publication. The Bulletin will contain brief items on municipal government administration; and Kentucky's municipal officials are invited to contribute anything that they believe will be of interest and value to other officials of Kentucky cities.

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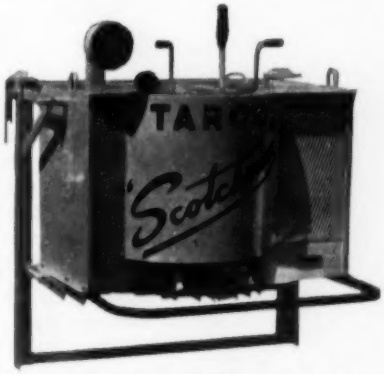

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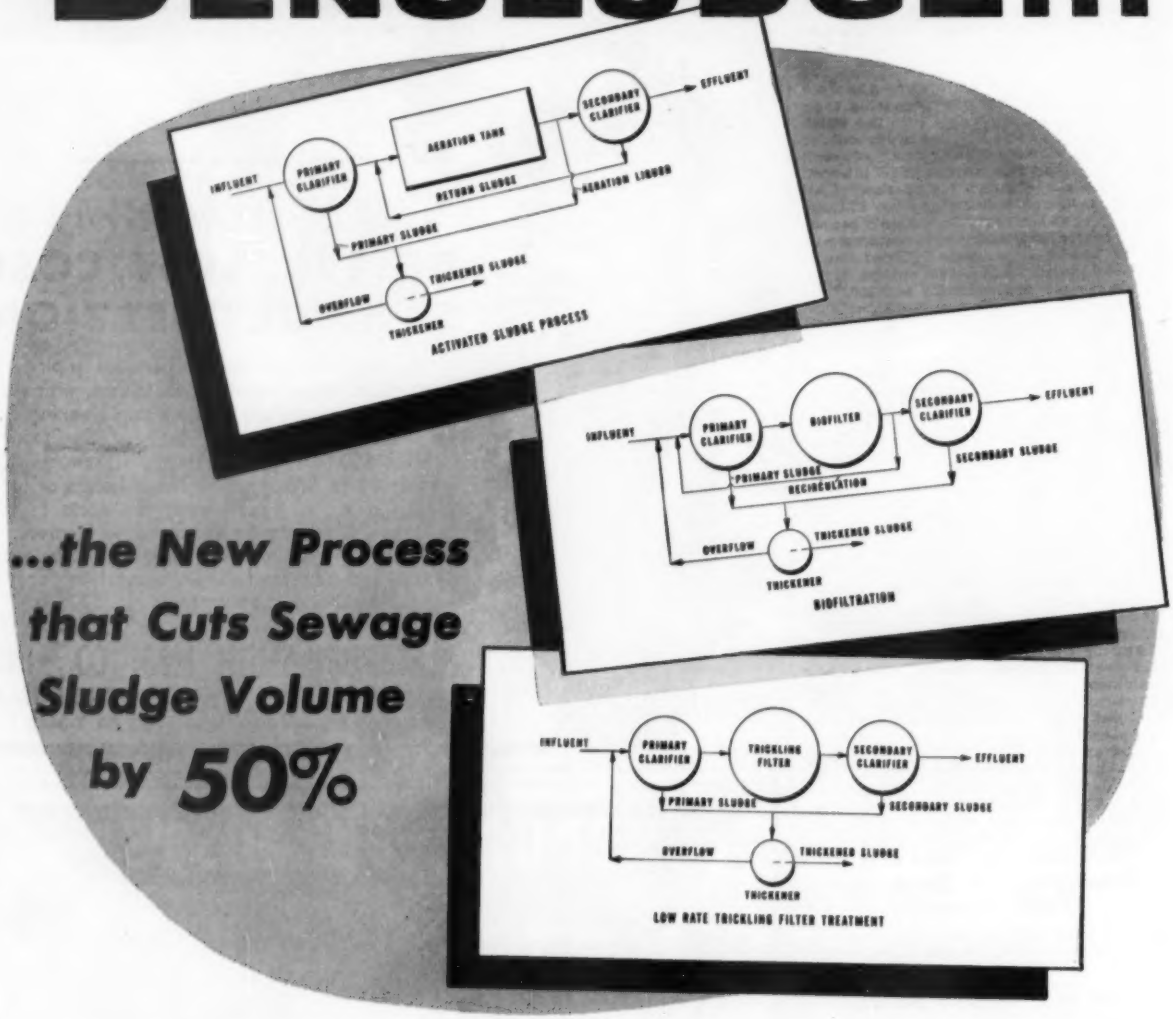

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Good Model for Report Writers

OPERATION AND MAINTENANCE OF SCHOOL BUILDINGS. Part III — *Report of Superintendent of Schools*, 1953-54. *The Bureau of Plant Operation and Maintenance, Board of Education, City of New York. May* 1954. 30 *pp.*

How the New York City Board of Education organizes and carries out the operation and maintenance of its school buildings is explained in this clear and readable report. School superintendents (the executive variety) in large cities as well as other municipal officials responsible for the maintenance of a large number of public buildings will find this to be worthwhile reading. Aside from its technical value, this booklet is a fine example of good municipal reporting. The simple explanations of the functioning of the Bureau of Plant Operations and Maintenance give the reader who is unfamiliar with the Bureau a quick and clear understanding. The technique of writing incorporated in this booklet could well be used in other annual reports.

Encouraging Better Rural-Urban Relations

TEAMING UP TOWN AND COUNTRY—*By Elmer R. Kiehl. Station Bulletin* 608. *University of Missouri, College of Agriculture, Columbia, Mo. October* 1953. 27 *pp.*

The methods of promoting better rural-urban understanding in metropolitan areas are discussed in this interesting pamphlet. Specific programs aimed at developing stronger economic relations and to build up trade areas surrounding central cities are presented. Some of the techniques used in the 15 cities surveyed included good-will tours through rural areas by groups of in-city business firms to stimulate better trade. Others included wholesale market fairs to which merchants in the trade area were invited. Forums, community development clinics, and other techniques are explained. Finally, a specific program for the St. Louis area is presented.

Illustrated Municipal Report

CITY REPORT, 1953-1954 — *Department of Administrative Services, Pittsfield, Mass.* 32 *pp.*

Pittsfield's annual report is outstanding in the use of illustrations to tell the story of the services the municipality performs. This makes for an exceptionally attractive and effective presentation of the city department's duties and activities.

Population and Economic Shifts in the St. Louis Area

RECENT SOCIAL AND ECONOMIC TRENDS—ST. LOUIS AND ST. LOUIS COUNTY — *Research Bureau, Social Planning Council of St. Louis and St. Louis County,* 505 *N. 7th St., St. Louis* 1, *Mo. November* 1954. 46 *pp.* $1.

City officials and others concerned with the population and economic shifts affecting central cities and surrounding suburban areas will find this study of great interest. Prepared especially to guide Community Chest directors in the St. Louis area in planning their future budgets, the report presents a well-documented picture of the increasing suburbanization of the St. Louis Area, the decentralization of industry, and the marked shift of buying power from downtown stores to suburban areas. Population changes affecting both young and aged people are documented, as is Negro population data, mobility of population, income, wages, and cost of living, and many other topics.

Other Reports Received

Civil Defense

GENERAL—Proceedings of Medical Civil Defense Conference, June 20, 1954, Sponsored by Council on National Defense of the American Medical Association, 535 N. Dearborn St., Chicago 10, Ill. 158 pp.

Finance and Taxation

HOUSTON, TEXAS — Analysis of the 20 Per Cent Assessment Increase. Prepared by Tax Research Association of Houston and Harris County, Inc. December 1954. Tables. 19 pp.

NEW HAVEN, CONN.—A Study of Tax Abatements. Report No. 39. Prepared by New Haven Taxpayers Research Council, Inc., 151 Court St., Room 403, New Haven 10, Conn. Tables. 19 pp.

PASADENA, CALIF.—Annual Report for Fiscal Year 1953-54. Presented by City Controller O. A. Dietrich. Illus. Tables. Graphs. 54 pp.

PORTLAND, ORE. — Annual Report of the City Auditor for the Fiscal Year Ended June 30, 1954. Available from Will Gibson, Auditor, City of Portland. Tables. 128 pp.

VIRGINIA — Virginia's Governmental Costs in Relation to Residents' Income. Division of Planning and Economic Development, Department of Conservation and Development, 301 State Finance Bldg., Richmond 19, Va. August 1954. Tables. Graphs. 89 pp.

WESTCHESTER COUNTY, N. Y. — Study and Report on Town and Village Tax Relationship. Westchester County Village Officials Association, Mamaroneck, N. Y. Tables. Unpaged.

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Laws and Legal Decisions

GENERAL—The NIMLO Model Fire Prevention Ordinance. National Institute of Municipal Law Officers, 730 Jackson Pl. NW., Washington, D. C. Unpaged.

Personnel

MISSOURI—Annual Report Missouri Personnel Division. Activities for Fiscal Year 1953-1954. State Personnel Division, Department of Business and Administration, 12th floor, Jefferson Bldg., Jefferson City, Mo. Tables. 43 pp.

Planning, Housing, and Zoning

CANADA—Housing in Canada. Vol. IX, No. 2. Second Quarter, 1954. Economic Research Department, Central Mortgage and Housing Corporation, Ottawa. October 1954. Tables. Graphs. 120 pp.

CAPE MAY COUNTY, N. J.—Progress Report for 1954. Prepared by Community Planning Associates, Inc., 92A Nassau St., Princeton, N. J. Tables. Graphs. Maps. 24 pp.

DENVER, COLO.—Housing Conditions. Department of Health and Hospitals. 1954. Illus. 16 pp.

SCHENECTADY, N. Y.—County Planning for Schenectady County. Schenectady Bureau of Municipal Research, Inc., 20 Jay St., Schenectady 5, N. Y. 4 pp.

WINNIPEG, CANADA—Planning Greater Winnipeg. Report for the Year 1953. Metropolitan Planning Commission of Greater Winnipeg, 334 Portage Ave., Winnipeg, Canada. Map. 24 pp.

Public Health

SPRINGFIELD, MASS.—Good Health to You. An Administrative Study of the Department of Public Health, Springfield, Mass. Report No. 2. Licensing Available from Future Springfield, Inc., 458 Bridge St. 35 cents.

Recreation

ANCHORAGE, ALASKA—Recreation in Anchorage. By Richard S. Westgate and Victor Fischer. Vol. I in a series on community recreation in the Territory sponsored by the National Park Service, U. S. Department of Interior. Available from Mr. Fischer, Planning Director for the City of Anchorage. June 1954. Illus. 35 pp.

Refuse

SACRAMENTO, CALIF.—Report on the Investigation of Leaching of a Sanitary Landfill. Publication No. 10. State of California Water Pollution Control Board, Room 610, 721 Capital Ave., Sacramento 14, Calif. 1954. Illus. Tables. Graphs. 89 pp.

Sewerage and Sewage Treatment

MINNEAPOLIS–ST. PAUL, MINN.—Twenty-first Report of the Minneapolis–St. Paul Sanitary District for the Year 1953. The Subject of Sewage Disposal of Minneapolis, St. Paul and Contiguous Areas. Available from Offices located at Administration Bldg., Childs Road, St. Paul 1, Minn. Illus. 77 pp.

TEXAS—Program of the Industrial Section of the Thirty-seventh Texas Water and Sewage Works Association. Short School in Cooperation with State Department of Health. March 7-8-9, 1955. Texas A. & M. College, Memorial Student Center, College Station, Texas.

VIRGINIA—Sewer Charges, Levies and Special Assessments in Virginia Cities and Towns. Report No. 369. November 1953. League of Virginia Municipalities, 905 Travelers Bldg., Richmond 19, Va. 21 pp. $1.

Street Construction and Highway Maintenance

ANCHORAGE, ALASKA—Anchorage Area General Highway Plan. City Planning Commission, Highway Planning Committee, Anchorage, Alaska. August 1954. 12 pp.

OAKLAND, CALIF.—Street and Engineering Department Annual Reports. Fiscal Year 1953-1954. Illus. Unpaged.

Water Supply and Treatment

LONG BEACH, CALIF.—Long Beach Water Department. Annual Report 1953-54. Vol. II. Available from Main Office, 215 W. Broadway, Long Beach, Calif. Tables. 58 pp.

NEW JERSEY—Water Supply Studies — Arranged chronologically; classified by Project. New Jersey Taxpayers Association, 143 E. State St., Trenton 8, N. J. November 1954. 49 pp.

OHIO—Ohio River Valley Water Sanitation Commission. Sixth Annual Report, 1954, of interstate pollution-control activities to the Governors of Illinois, Indiana, Kentucky, Ohio, New York, Pennsylvania, Virginia, West Virginia. Available from the Commission, 414 Walnut St., Cincinnati 2, Ohio. Illus. 24 pp.

PASADENA, CALIF.—Forty-first Annual Report of the Pasadena Water Department, 1953-54. Illus. Tables. Maps. 66 pp.

GENERAL—Standards for Lining Pipe in Place. Obtainable from American Water Works Association, Inc., 521 Fifth Ave., New York 17, N. Y. 6 pp. 25 cents.

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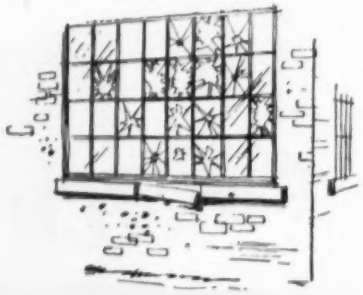

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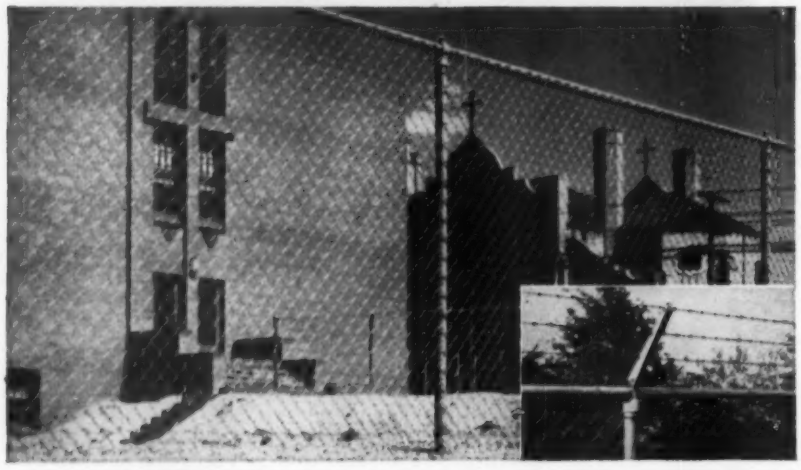

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(Continued from page 147)

just joined the staff. He may feel as green and bewildered as you did once. The treatment he receives at the start will color his whole attitude. The right reception can go far toward making him a valuable member of the city team.

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If you don't like the way something is being done, try to work out a better plan and submit it to the department head concerned. If it has merit he will see that it goes farther. Don't just sit back and knock. The fact that a thing has been done a certain way for years does not mean it cannot be done more efficiently another way. Constructive suggestions build efficiency and better service to the general public.

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When you see someone doing a good job why not say so? Say it to him. Say it to others. Praise encourages fellow workers to do their best and helps you to get ahead as a likeable, constructive city employee.

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When a taxpayer is mistaken, don't contradict him or make him appear foolish. Agree that his idea may have been the practice formerly, but then explain the present method. This lets him feel his error is quite natural. In other words, give him every opportunity to *save face*.

Act with Tact . . .

Back-talk back-fires. Never forget that a taxpayer is free to express his displeasure. But if you lose your temper or talk back, the resulting ill-will back-fires not only on yourself, as an individual, but on all your fellow city employees. The wise plan is to be sympathetic and helpful. Anger has no comeback against such an attitude. If you cannot remedy the trouble yourself, take the matter promptly to someone who can.

Assembly Planned for Users of Informational Films

THE SECOND American Film Assembly, sponsored by the Film Council of America is to be held April 4 to 8, at New York's Waldorf-Astoria.

During this Assembly outstanding 16mm productions in 25 subject categories will be judged by professional juries, and the best film in each category will receive the Golden Reel Award—top honor in the cultural and informational film field.

Among the categories of interest to readers of THE AMERICAN CITY are Citizenship and Government, Education, Health and Hygiene, Natural Resources, Recreation, and Safety.

The Assembly will be an opportunity for film users to see the latest films in their special field of interest. There will be a film users' workshop, designed for the beginner, and an opportunity to meet with film professionals and subject-matter specialists to discuss more advanced film problems.

Further information may be obtained from the Film Council of America, 600 Davis Street, Evanston, Ill.

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More Rugged-Than-Ever 'Jeep'®

MODEL CJ-5

NEW, fully-boxed, front cross-member adds to the carrying strength, rigidity and rugged endurance of the frame.

NEW, sturdier body design with sheet metal flanged and overlapped for extra strength . . . center mounted to relieve road strain and for even greater sturdiness.

NEW, larger windshield has approximately 100 sq. in. of additional glass area and folds on stronger hinges. New streamlined hood offers increased visibility.

NEW, softer front seating is form fitting, bucket design with coil springing and gives a more comfortable ride.

Ask your 'Jeep' dealer for a demonstration.

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the job is easily done with
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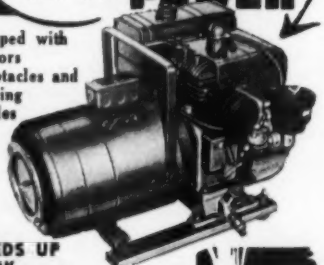
60 cycles A.C. POWER



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CUTS COSTS!

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Model above generates 115 volt alternating current, 60 cycles. Other AC models from 350 watts to 50 KW. DC Models to 15 KW.

STANDBY POWER PLANTS

Whatever your municipal departments need, you'll find a Katolight generating unit up to 300 KW.

WRITE FOR DETAILS

Katolight CORPORATION
Box 891-25 Mankato, Minnesota

Conventions—When and Where

(*Continued from page 187*)

May 29-June 3—San Francisco, Calif.
NATIONAL CONFERENCE ON SOCIAL WORK. Annual Conference (Palace, Whitcomb, and St. Francis Hotels). Exec. Sec., Joe R. Hoffer, 22 W. Gay St., Columbus, Ohio.

***June 1-3—Asbury Park, N. J.**
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Convention (BerkleyCarteret). Sec., Chief Edwin J. Clark, Box 271, Wayne, Pa.

***June 8-10—Albert Lea, Minn.**
LEAGUE OF MINNESOTA MUNICIPALITIES. Annual Meeting (Albert Lea Hotel). Exec. Sec., C. C. Ludwig, University of Minnesota, 15 University Library Bldg., Minneapolis 4, Minn.

***June 8-11—Buck Hill Falls, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP COMMISSIONERS. Annual Meeting (Buck Hill Falls Inn). Sec.-Treas., Henry C. Lamparski, 1327 Pacific Ave., Brekenridge, Pa.

***June 9-10—Tacoma, Wash.**
ASSOCIATION OF WASHINGTON CITIES. Annual Meeting (Winthrop Hotel). Exec. Sec., Chester Biesen, 250 Smith Hall, University of Washington, Seattle 5, Wash.

***June 9-11—McCall, Idaho**
IDAHO MUNICIPAL LEAGUE. Annual Meeting (Shore Lodge). Exec. Sec., Robertson W. Smith, Box 787, Weiser, Idaho.

June 12-17—Chicago, Ill.
AMERICAN WATER WORKS ASSOCIATION. Annual Conference (Conrad Hilton Hotel). Sec., Harry E. Jordan, 521 Fifth Ave., New York, N. Y.

***June 15-17—Buffalo, N. Y.**
NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting (Hotel Statler). Exec. Sec., Morgan Strong, 6 Elk St., Albany, N. Y.

***June 16-18—Miles City, Mont.**
MONTANA MUNICIPAL LEAGUE. Annual Meeting. Exec. Dir., Alfred F. Klinger, Box 51, Kalispell, Mont.

***June 21-24—Minneapolis, Minn.**
THE AMERICAN INSTITUTE OF ARCHITECTS. Annual Convention (Radisson Hotel). Convention Manager, Arthur B. Holmes, 1735 New York Ave. NW., Washington, D. C.

***June 22-24—Columbus, Ohio**
OHIO SEWAGE AND INDUSTRIAL WASTES TREATMENT CONFERENCE. Annual Conference. (Deshler-Hilton). Sec.-Treas., Ward E. Conrad, 301 Ohio Departments Bldg., Columbus 15, Ohio.

***June 22-24—Glenwood Springs, Colo.**
COLORADO MUNICIPAL LEAGUE. Annual Meeting (Colorado Hotel). Exec. Dir., Jay T. Bell, 327 Norlin Library, Boulder, Colo.

***June 22-24—Deadwood, S. D.**
LEAGUE OF SOUTH DAKOTA MUNICIPALITIES. Annual Meeting (Franklin Hotel). Exec. Dir., J. G. Barger, City Hall, Aberdeen, S. D.

***June 26-28—Jackson, Miss.**
MISSISSIPPI MUNICIPAL ASSOCIATION. Annual Meeting (Heidelberg Hotel). Exec. Sec., George Lemon Sugg, 316 E. Pearl St., Jackson, Miss.

***June 26-29—Philadelphia, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF BOROUGHS. Annual Meeting (Benjamin Franklin Hotel). Sec., H. F. Alderfer, Room 281, The Capitol, Harrisburg, Pa.

***June 26-July 1—Atlantic City, N. J.**
AMERICAN SOCIETY FOR TESTING MATERIALS. Annual Meeting (Chalfonte-Haddon Hall). Exec. Sec., Robert J. Painter, 1916 Race St., Philadelphia 3, Pa.

***June 26-29—Detroit, Mich.**
AMERICAN SOCIETY OF LANDSCAPE ARTISTS. Annual Meeting (Sheraton Cadillac Hotel). Corr. Sec., Bradford Williams, 9 Park St., Boston 8, Mass.

***July 17-20—Richmond, Va.**
NATIONAL ASSOCIATION OF COUNTY OFFICIALS. Annual Convention (John Marshall Hotel). Exec. Sec., Keith L. Seegmiller, 1616 Eye St. NW., Washington, D. C.

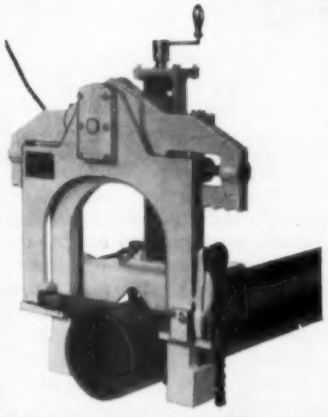
***July 17-20—Edgewater Park, Miss.**
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting (Edgewater Gulf Hotel). Exec. Sec., Charles F. Conlon, 1313 E. 60th St., Chicago 37, Ill.

***Sept. 14-16—Flint, Mich.**
AMERICAN WATER WORKS ASSOCIATION—Michigan Section. Sec. T. L. Vander Velde, Chief, Section of Water Supply, State Department of Health, Lansing 4, Mich.

***Sept. 18-22—Lake Placid, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—New England Section. Annual Meeting (Lake Placid Club). Sec., G. C. Bogren, Weston & Sampson, 14 Beacon St., Boston 8, Mass.

***Sept. 21-23—Columbus, Ohio**
AMERICAN WATER WORKS ASSOCIATION—Ohio Section. Annual Meeting (Neil House). Sec., M. E. Druley, Dayton Power & Light Com., Wilmington, Ohio.

Oct. 10-13—Atlantic City, N. J.
FEDERATION OF SEWAGE AND INDUSTRIAL WASTES ASSOCIATIONS. Annual Meeting (Ambassador Hotel). Exec. Sec.—Editor, Ralph E. Fuhrman, 325-26 Illinois Bldg., Champaign, Ill.



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Equipped with a snow blade, the all-new 4-Wheel-Drive Universal 'Jeep' is an efficient snow plow for clearing driveways, walks and service areas. The hydraulically-controlled blade can be quickly attached or detached.

Snow removal is another job done better with the 4-wheel-drive traction and maneuverability of the all-new 'Jeep'. No other vehicle spreads its cost over so many jobs. Your 'Jeep' dealer will give you complete details.

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If management could design a business building

Butler buildings cover 185,000 square feet of space—at dramatically low cost, for The Coleman Company, Inc.

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If management could redesign the "shirtsleeves" buildings of business—factories, warehouses, outlets—everyone would agree that high costs are the first problem—cost of materials, erection, expansion, alteration, maintenance. Butler steel buildings have already solved these problems—and several more besides. Steel and aluminum need little care. Steel clear-span frames make every cubic foot of interior usable. Bolted assembly makes erection quick and easy. Bolted apron walls make expansion or alteration economical. Mass production produces buildings to high quality standards—for about the price you'd pay for cheapest construction. For proof—mail coupon today.

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1015 Avenue W, Ensley, Birmingham, Ala.
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Please mail more information on Butler steel buildings.

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Financing Public Services

(Continued from page 108)

doubtedly as we gain experience refinements in procedures and organization will take place. At the present time a special Committee of Council has been appointed to study the question of amalgamating the police and fire departments of the 13 Area Municipalities under the jurisdiction of the Metropolitan Council.

In our short life as a municipality definite progress has been made in achieving the purposes for which this Federation was constituted. The suburban municipalities have been able to secure the funds to proceed with essential services in a much larger volume than would otherwise have been the case. They have been able to secure these funds through the Metropolitan Corporation at a saving in interest costs of at least 1% which in dollars will run to millions over the term of the respective debenture debts. Furthermore, it is gratifying to note the evidence of the gradual disappearance of local prejudices among the representatives on the Metropolitan Council and the development of thinking on a Metropolitan basis.

By reason of the comprehensive nature of the municipal services which will be administered by the Metropolitan Corporation, the Metropolitan Toronto Act establishes a plan which is unique in municipal government. Time alone can judge whether this is the most feasible solution, but if it should prove that complete amalgamation is the answer, this can still be achieved as the present Metropolitan Act leaves the way open.

EDITORIAL NOTE: Excerpts from a paper on "Financing Toronto's New Metropolitan Government," presented at the Tax Institute Symposium, Princeton, N. J., November 18-19, 1954.

Esthetics and the Police Power

(Continued from page 179)

ly. It was important to redesign the whole area so as to eliminate the conditions that cause slums. . . . The entire area needed redesigning so that a balanced, integrated plan could be developed for the region, including not only new homes but also schools, churches, parks, streets, and shopping centers. In this way it

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LEOPOLD
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FILTER BOTTOMS

Here's why—

Permanent • No corrosion or tuberculation • Equal distribution • Low loss of head • Requires only small sized gravel • No metal in contact with water!

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2413 W. Carson Street
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One Planning Designer III Wanted

Salary range: $5,652—$7,100.

Qualifications: Graduation from a four-year college or university with major course work in planning, engineering, architecture or landscape architecture, plus three years' experience in land planning and site planning, including one year in supervisory or advanced technical capacity.

Ability to supervise the work of five to seven land planners necessary. Knowledge of detailed redevelopment procedures and subdivision layout desirable.

Write to:

David A. Wallace,
Director of Planning and Redevelopment
Philadelphia Redevelopment Authority,
910 Board of Education Building.
Philadelphia 3, Pa.

was hoped that the cycle of decay of the area could be controlled and the birth of future slums prevented. . . . If owner after owner were permitted to resist these redevelopment programs on the ground that his particular property was not being used against the public interest, integrated plans for redevelopment would suffer greatly. . . . It is not for the courts to oversee the choice of the boundary line nor to sit in review on the size of a particular project area. Once the question of the public purpose has been decided, the amount and character of land to be taken for the project and the need for a particular tract to complete the integrated plan rests in the discretion of the legislative branch. . . .

"The District Court indicated grave doubts concerning the Agency's right to take full title to the land as distinguished from the objectionable buildings located on it. 117 F. Supp. 705, 715-719. We do not share those doubts. If the Agency considers it necessary in carrying out the redevelopment project to take full title to the real property involved, it may do so. It is not for the courts to determine whether it is necessary for successful consummation of the project that unsafe, unsightly, or insanitary buildings alone be taken or whether title to the land be included, any more than it is the function of the courts to sort and choose among the various parcels selected for condemnation. . . . The judgment of the District Court, as modified by this opinion is affirmed."

The Supreme Court's "modifications" of the judgment below amount almost to a reversal in substance on several points, but led to the same formal result. The landowner was held to have no case. His property was subject to condemnation.

Justice Douglas's opinion was the "opinion of the court." There was no dissent, nor any reservation or qualification from any other justice. The case is now a leading case on esthetics and the police power.

Smoking Banned in Rochester Stores

THE New York State *Municipal Bulletin* for December 1954 reports that the Rochester City Council has adopted a regulation prohibiting smoking in certain retail stores. This new ordinance, which went into effect on November 29, applies to any retail store with a floor area greater than 10,000 square feet or having more than one story.

The public safety commissioner can ban smoking in other stores if he feels smoking would be dangerous. Demonstrations using flames or sparks also are outlawed by the new law, unless the commission grants an exception.

Store owners must post "Smoking prohibited by law, Fire Marshal" signs if their stores are affected. The law was backed by the Retail Merchants Council.

LEADITE

The Pioneer Self Caulking Material for C. I. Pipe

YOU CAN'T GO WRONG WITH

The pioneer self-caulking material for cast iron bell and spigot water pipe which, for more than 50 years, has shown water works men how well it makes a good tight joint that improves with age.

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Girard Trust Co. Bldg., Phila. 2, Pa.

No Caulking

KEEP YOUR MEN BUSY DURING BAD WEATHER

Making Your Concrete Park And Picnic Equipment. City Commissions are finding that citizens appreciate an Attractive Community.

Start on your Spring Requirements NOW
The ANSWER—CMC ALUMINUM MOLDS
Write for illustrated catalog
CONCRETE MACHINERY CO.
Drawer 60
HICKORY 19, NORTH CAROLINA

FISHER
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PIPE-CABLE-FINDER
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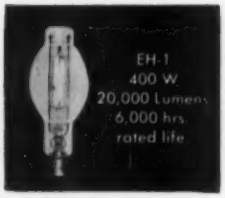
TWICE AS MUCH light for wattage consumed • Burning life several times longer than incandescents • 6,000 HOUR GUARANTEE!



For full information on AMPLEX street lighting and traffic signal lamps, write to **Amplex Corporation, Dept. AC-2, 111 Water St., Brooklyn 1, N. Y.**

Catalogs for You

Write directly to the manufacturers or use coupon on page 31

Filters to Handle 5 Million Gallons Daily

632 Almost any volume of city water can be filtered economically in the Sparkler SCJ filter. Single diatomite filters are capable of handling some 5,000,000 gallons of water a day, and multiple units can be engineered into a system for larger requirements. Moreover, Sparkler filters combine long filter cycles with fast backwash cleaning for reduced operating costs. For plans and prices on your needs, write SPARKLER MFG. CO., MUNDELEIN, ILL.

Leak-Proof Joints For Water Mains

633 You can forget your worries about leakage at the joints in your city's water mains, and you won't need a skilled craftsman to make the joints either, if you use the self-caulking jointing material made by THE LEADITE CO., GIRARD TRUST CO. BLDG., PHILADELPHIA 2, PA. Write directly to the company for full details about this product that has such a wide list of satisfied users throughout the nation's water systems.

Efficient Sewer Cleaning At Low Cost

634 Cleaning sewers with the new SeweRodeR is fast and easy, according to the FLEXIBLE SALES CORP., 3786 DURANGO AVE., LOS ANGELES 34, CALIF. The unit rods up to 3,000 feet per day at a cost of less than three cents per foot. It operates in congested areas without tying up traffic and, at the same time, keeps the men on the street level and out of manholes. Write for literature.

New 2-Way Radio System Serves All Departments

635 This new, coordinated 2-way communication system enables all municipal departments to listen to every important message. The mobile or stationary monitor receivers are priced to meet any budget. They are available crystal controlled or tunable for any VHF FM communication system, from the MONITORADIO RADIO APPARATUS CORP., 7900 PENDLETON PIKE, INDIANAPOLIS, IND.

Automatic Machines Speed Election Returns

636 An increasing number of towns, cities and counties are switching from the old paper ballot with its long, laborious count, to a modern voting machine that counts ballots automatically. With these dependable machines, first returns start coming in immediately after the polls close, and the mechanically accurate and total count is known within a short time. Investigate the advantages of machine voting by writing to the AUTOMATIC VOTING MACHINE CORP., JAMESTOWN 55, N. Y.

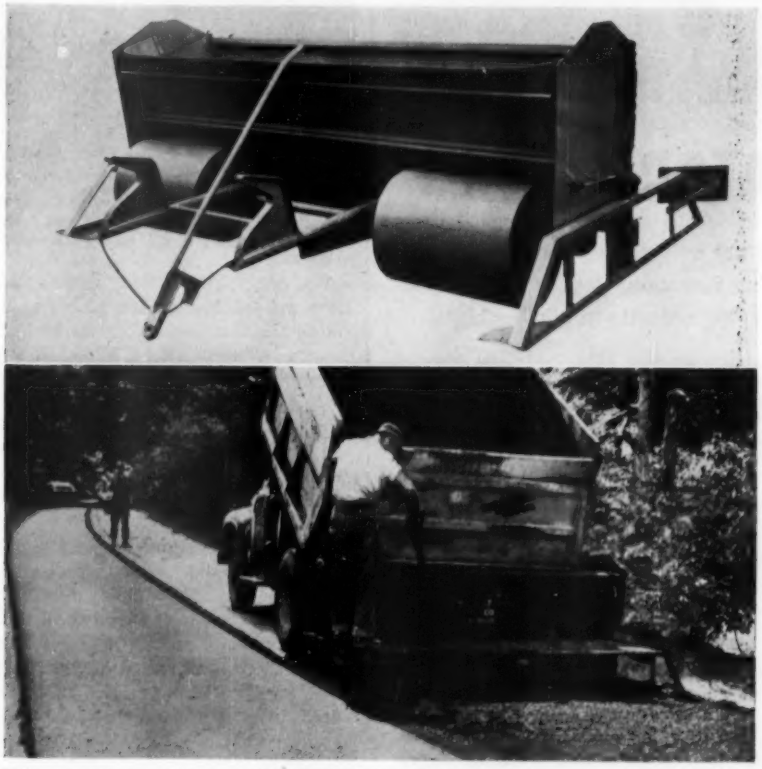
Automatic Control of Water-Works Valves

637 By limiting the amount of torque applied to valve operating parts, LimiTorque offers a simple, economical means of controlling water-works valves automatically. The new LimiTorque SMA valve control for large and small valves is fully described in *Catalog L-54*. For your copy, write the PHILADELPHIA GEAR WORKS, ERIE AVE. AND G ST., PHILADELPHIA 34, PA.

Purchasing News

Information for officials interested in equipment and services for the construction, operation and maintenance of municipal utilities

New Asphalt and Aggregate Spreader



This versatile spreader is easily attached to any standard dump or semi-dump truck.

A hopper-type asphalt and aggregate spreader that will spread a smooth carpet of dry materials as well as asphalt is announced by the Good Roads Machinery Corp. The machine is a departure by this manufacturer of road maintenance equipment and marks its entry into the street construction field. It hooks, in seconds, to any standard dump or semi-dump truck without attachments.

The hopper is mounted on large-diameter, wide, steel rollers. A "strike-off" unit that floats free of the hopper insures accuracy of spread up to eight inches and eight feet wide.

The unit will spread hot or cold plant-mix asphalt, tank-run gravel, coarse or fine slag and limestone, cinders, and base materials. Its versatility, combined with low-cost and speedy operation, offers opportunities for substantial cost savings on a wide variety of paving jobs from pathways or small driveways to highways, parking lots, airport taxistrips or runways.

Complete information on the new spreader is available from Gomer Jenkins, Good Roads Machinery Corp., Minerva, Ohio. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 890.

LeTourneau-Westinghouse Buys J. D. Adams Mfg. Co.

The LeTourneau-Westinghouse Co. has purchased the plant and assets of the J. D. Adams Mfg. Co., of Indianapolis, Ind., according to a recent announcement. Adams, a pioneer manufacturer of roadbuilding and earthmoving equipment, is well known for its full line of Motor Graders and Traveloaders.

According to Merle R. Yontz, president of LeTourneau-Westinghouse, the purchase includes inventories, receivables, and some 500,000 square feet of plant and manufacturing facilities in Indianapolis and Canada. All Adams' products will continue to be produced at these plants which will be known as the Adams Division of the LeTourneau-Westinghouse Co. Present Adams' personnel will be retained, and the company's distribution, production and managerial policies will remain the same.

Under the terms of the new agreement, Howard R. Meeker, president of the J. D. Adams Mfg. Co., will become chairman of the board of LeTourneau-Westinghouse. Mr. Yontz continues as president.

Floyd D. Wallace, vice-president of Adams, will take over as a vice-president and director of LeTourneau-Westinghouse and as general manager in charge of manufacturing operations in Indianapolis. Other key Adams' personnel to be associated with LeTourneau-Westinghouse include W. W. White, who will serve as a consultant, and Morris L. Brown, new director and assistant secretary.

The LeTourneau-Westinghouse Co., a subsidiary of the Westinghouse Air Brake Co., is located in Peoria, Ill.

Radio Communications Extended

Police and fire departments have found that selective calling equipment, used in conjunction with 2-way radio, makes radio communications more effective, according to James D. Helm, sales manager, mobile communications equipment, General Electric Co., Syracuse, N. Y.

Tone signalling equipment permits a radio dispatcher to communicate with any desired group of 2-way radio equipped vehicles or with any individual mobile radio-equipped vehicle, providing a means of reaching the driver of the vehicle when he is out of the car or truck.

A detailed description of this low-cost tone signalling equipment may be obtained by writing directly to the General Electric Co., or take advantage of the Post Card on the colored page in this section. Circle No. 900.

. . . with this

F & E INCINERATOR STOKER

Patents Pending

F&E Incinerator Stokers apply not only to new incinerator plants, but to many now existing furnaces. Results—up to 50% increased burning capacity; big reduction in labor; big reduction in maintenance.

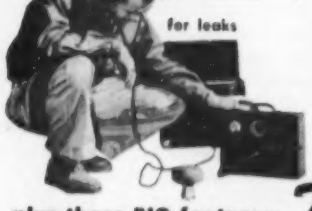
F&E **FLYNN & EMRICH CO.**

301 N. Holliday St. ★ Baltimore 2, Maryland

FROM THE WORLD'S FINEST DETECTION EQUIPMENT MANUFACTURERS

Let 1 instrument do all your work . . .

THE *Dualtronic* MODEL LC-5



Here is the instrument for which Municipalities have been looking . . . ONE instrument that locates Pipes, Leaks and Valves, yet costs no more. Model LC-5 not only saves you money but does the job accurately and dependably. Ruggedly constructed. Compact. Lightweight. Simple, one man operation. Model LC-5 is fully guaranteed.

plus these BIG features:

1. Use as Pipe Locator, Leak Detector, Valve Locator.
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The GOLDAK Company

Leading Electronic Manufacturers Since 1933

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WRITE FOR COMPLETE BROCHURE

Purchasing

Fast Way to Remove Traffic Lines

New "one-man" Tennant machine quickly removes paint from center lines, parking zones, meter areas and stop zones.

You don't have to tie up traffic to remove painted traffic lines, according to the G. H. TENNANT CO., 2520 N. SECOND ST., MINNEAPOLIS 11, MINN. A new "one-man" machine, only 18½ inches wide, operates in busy traffic areas, removing traffic lines up to 8 inches wide. The operator simply guides the semi self-propelled unit over the paint line at a slow walking speed, shaving off the paint in one operation.

The Tennant traffic line removing machine is powered by a 6-hp gasoline engine, and utilizes a spinning cutter head fitted with scores of heat-treated steel cutters. The unit is effective on concrete or asphalt surfaces, eliminating the use of both water and chemicals. It weighs some 254 pounds, and features a sturdy hoisting frame for easy lifting onto a truck.

The G. H. Tennant Co. will furnish full details on this economical, high-speed unit. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 892.

Hubbard Completes Expansion Program

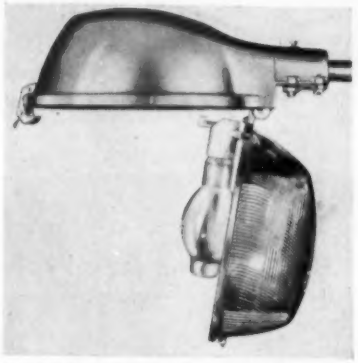
Hubbard and Co., of Pittsburgh, Pa., manufacturers of pole line hardware, recently completed a 1½-million dollar expansion and modernization program at its three major plants, according to James H. Knowles, president of the 112-year-old firm. These plants are located in Oakland, Calif., Chicago and Pittsburgh.

The Oakland branch, located in the heart of the San Francisco Bay area, has added some 40,000 square feet of floor space, including a new building for galvanizing operations and additional room

for storage of raw materials and assembly operations.

Hubbard's Chicago operations, in nearby Cicero, have been expanded through the addition of a new warehouse and loading dock. In Pittsburgh, the company has completed an extensive program of warehousing and shipping improvements, and is now making major layout and equipment changes in its pole line hardware manufacturing operations.

New Street-Lighting Luminaire



A sturdy cast-aluminum hood houses the Alzak-treated aluminum reflector and supports the hinged refractor.

Ovalite luminaires with "service-safe" sockets for application to multiple or series, mercury-vapor street-lighting circuits, are offered by the LINE MATERIAL CO., MILWAUKEE 1, WIS. The new luminaires provide speedy installation, safe maintenance, and safe relamping. They are available with refractors for Type III or Type IV light distribution.

The lamp and socket of each luminaire are parts of the hinged refractor assembly and are immediately de-energized and isolated from the circuit as the luminaire is opened. Series luminaires incorporate make-before-break contacts that eliminate arcing while maintaining circuit continuity. The same make-before-brake action is employed when the luminaire is closed.

Ovalite luminaires for multiple circuits accommodate A-H1, E-H1, or C-H5 mercury vapor lamps, or their color improved versions. Ovalites with the "service-safe" feature for series circuits accommodate E-H1 and J-H1 lamps. These luminaires are adaptable to horizontal or pendant mounting.

Detailed information on Ovalite luminaires may be obtained directly from the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 908.

This Jaeger pumps all the water a 2" hose can handle Hi-performance Jaeger Model 2PN will actually pump all the water that can be pulled through a 2" suction line under average working conditions. Delivers 10,000 gph when operating at only 2400 to 2550 rpm (as much as 400 rpm below the speeds of similar ordinary pumps). Weighs only 160 lbs. on base, 190 lbs. on pneumatics. For complete information on this model or other Jaeger pumps, see your Jaeger distributor or send for Catalog P-4.

Other sizes 1½" to 10"

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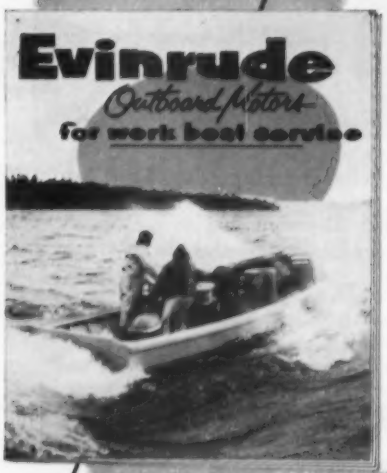

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Purchasing News

Bituminous Paver Speeds Roadway Construction

The speedy paver laid the 12-foot courses at an average rate of 24 feet per minute.

An important link for moving Chicago loop traffic to the Lake Shore Drive was completed in record time recently, with the aid of a Blaw-Knox bituminous paver. This speedy unit laid courses of bituminous base at an average rate of 24 feet per minute, completing the job in 13 days, more than a week ahead of schedule.

The work of constructing the two roadways, each ½-mile long and 48 feet wide, was given to the Standard Paving Co., of Chicago. A base of crushed rock was laid by blade and topped with two courses of bituminous base. The two base courses were laid 1½ inches thick and were covered with a finish top course, 12 feet wide.

While the material was laid at an average rate of 24 feet per minute, the paver's output was materially retarded by the long haul. Mix was transported through city traffic from the Standard Paving Company's plant some 12 miles out. It was delivered in 10- to 15-ton batches.

How the versatile Blaw-Knox paver will speed street and road construction in your community, is discussed in literature from the BLAW-KNOX CO., BLAW-KNOX EQUIPMENT DIV., PITTSBURGH 38, PA. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 901.

Neon Pedestrian Signal

This new neon pedestrian signal is available with either DON'T-WALK or WALK-WAIT tubes. The tube housing and hood assembly can be attached to any standard adjustable Autoflow signal assembly by removing the existing door and optical unit assembly and replacing it with the neon unit. No changes are required to the standard equipment. Complete units also mount on any signals with standard mounting brackets.

The inside of the tube housing and hood are finished flat black and the outside finished with a coat of primer and two individually baked coats of enamel, either federal yellow or dark green. The

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unequalled patrol for business and residential beats . . . thorough as a man on foot, yet motorized for speed.

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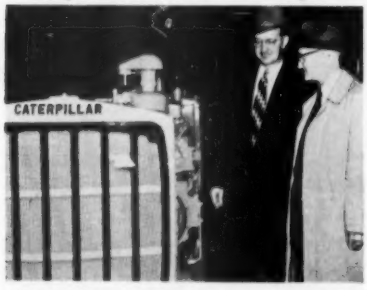
HARLEY-DAVIDSON MOTOR CO. • Milwaukee 1, Wis.

4-inch high letters are formed to provide maximum readability. Total weight of the standard unit is about 25 pounds.

Full details on the new neon pedestrian signal are contained in *Bulletin* 5405. For your copy, write SOUTHERN SIGNALS INC., 222 BEACH ST., P. O. BOX 1303, SHREVEPORT, LA., or you may use the Post Card on the colored page in this section. Circle No. 893.

Eugen Diesel Visits Caterpillar Plant

A visit to the United States by Dr. Eugen Diesel, recently, included a tour of the Caterpillar Tractor Company plant in Peoria, Ill. Dr. Diesel, the son of Rudolf Diesel, inventor of the diesel oil engine, inspected the intricate manufacturing processes involved in the production of the Caterpillar engines. His tour included a trip to Caterpillar's proving grounds where he witnessed huge diesel-powered earth-moving equipment in action.



Gordon Swardenski (left), manufacturing manager of Caterpillar's Peoria Plant, and Dr. Eugen Diesel look over a finished Caterpillar diesel engine which is ready for shipment to a job.

According to Dr. Diesel, this country has far surpassed the rest of the world in the use of diesel power. It has the largest diesel engine factories in the world—the result of "superior organization, machine tools, wealth, material and working conditions." He pointed out, however, that other countries were fast improving in the production of the engine. Japan, he said, is now manufacturing a very small diesel engine that produces as little as one horsepower.

Dr. Diesel is a noted writer, scientist and publisher in Germany. Several books he has written include: "Germany and the German People," "Struggle About a Machine," and "Diesel," the story of the development of the diesel engine.

New Reinforced Blade For Masonry Cutting

THE CLIPPER MFG. CO., 2800 WARWICK, KANSAS CITY 8, MO., introduces a new break-resistant abrasive blade, the triple-reinforced "Polk-A-Dot," for cutting hard, medium and soft masonry material. Both sides of this economical blade are symmetrically covered with raised abrasive polka dots, each acting as an extra cutting edge. The sturdy unit combines the efficiency of conventional blades with the added safety of scientifically designed reinforcing.

Each Clipper "Polk-A-Dot" blade is reinforced out to the cutting edge with glass fiber webbing, with extra reinforcing on both sides of the blade at the hub, where the strain is greatest. In operation, the polka dots reduce side-friction, permitting a maximum of power to be delivered to the cutting edge of the blade.

Detailed information on the new reinforced blade is available directly from the manufacturer, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 911.

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tells how you save
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• HAULING
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Whatever your brush disposal problem, the new Fitchburg Chipper booklet probably has the answer for your operation.

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Speeds Street Maintenance

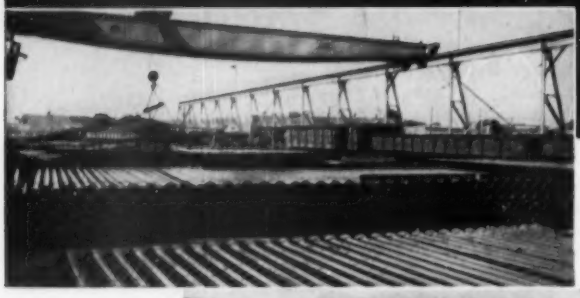
Latest addition to this company's extensive line of road building equipment is the Littleford-Clarkmoore Asphalt Road Heater Planer for conditioning bituminous streets, roads, and airport runways. Completely eliminating costly hand labor, the unit will plane a path up to 81 inches wide, from a skin cut to a depth of one inch, at speeds varying from 8 inches to 88 feet per minute. The heater planer travels from one job to another at speeds up to 20 miles per hour.

An International 4-cylinder engine, water cooled, with a 364 cubic-inch displacement, powers the hydraulically operated planer. Only one engine and transmission are required to operate the controls and propel the unit. The planer measures 20 feet at the wheel base, 28 feet 5 inches overall, and 82 inches wide.

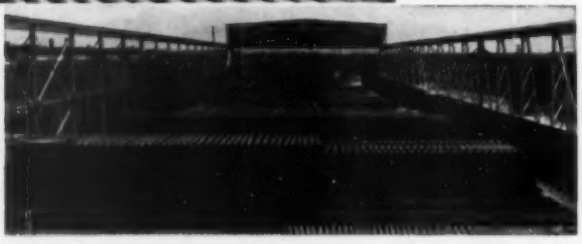
The engine of the new Littleford-Clarkmoore heater planer maintains a constant speed of 1,200 rpm when planing.

A detailed description of the Littleford-Clarkmoore Asphalt Road Heater Planer is available from LITTLEFORD BROTHERS, INC., 500 E. PEARL ST., CINCINNATI 2, OHIO. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 907.

Prompt Shipment CAST IRON PIPE



Pipe Foundry Shipping Yards at McWane Cast Iron Pipe Co., Birmingham, Ala.



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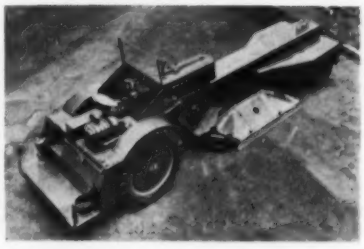
We offer prompt shipment of McWane-Pacific Super DeLavaud centrifugal Cast Iron Pipe in sizes 4-inch and larger, 18-foot laying length. You may have your choice of bell-and-spigot or Boltite mechanical joints.

Complete line of fittings available and both pipe and fittings furnished either uncoated, tar coated, standard cement lined or thin cement lined with seal coat. McWane sizes 4"—12", Pacific States 4"—24". For quick shipment, wire or phone McWANE CAST IRON PIPE COMPANY, Birmingham, Alabama or PACIFIC STATES CAST IRON PIPE COMPANY, Provo, Utah.

McWANE PACIFIC PIPE *Lasts for Centuries*

New Crawler Tractors and Trailers



Twelve 1955 models of crawler tractors, attachments and trailers, together with a low-cost lease-purchase plan, are announced in a series of special Tractorama shows throughout the United States and Canada, by the AMERICAN TRACTOR CORP., CHURUBUSCO, IND.

Included in the new Tractorama display is a crawler-mounted fork lifting device with a 14-foot 3-inch hoist for lifting, carrying and placing cement block, brick, steel beams and other materials. An extension is available for lifts up to 21 feet. This same unit may be fitted with an interchangeable ¾-yard bucket and dozer blade for handling gravel, top soil, backfilling, and general clean-up work.

A new Model "200" farm crawler, plus three larger models, the "300," "400," and "500," will be shown complete with hydraulically operated bulldozers, angling

dozers, front-end loaders, scarifiers, winches, and trenching machines. Also a low-cost, 5-ton tilting trailer, designed to haul a standard TerraTrac model behind any light truck.

Of special interest to small communities is the new TerraTrac long-term lease plan, with or without option to buy. The plan calls for less cash down and lower monthly payments. In addition, the company is issuing one hundred thousand $100 checks, redeemable through TerraTrac dealers, for registered attendance at a Tractorama show and purchase or lease of a new tractor within 30 days of registration date.

For complete information on the new TerraTrac models, plus the company's long-term lease plan, write directly to the American Tractor Corp., or you may use the Post Card on the colored page in this section. Circle No. 914.

Loader Adapts to Overhead Maintenance Work

A new application for the Venco tailgate loader is announced by the VEN CORP., 2832 NEWELL ST., LOS ANGELES 39, CALIF. Originally designed to lift objects from street level to truck bed level, the loader has been inverted and mounted on a small truck. Thus, it serves as an efficient unit for repairing and maintaining traffic signals, street lights and street-name signs.

The adjustable platform of this inverted loader is easily lowered and folded when the truck is in motion. Folded, the platform permits the aerial ladder to swing a full 360°.

Complete information on the Venco tailgate loader as used for overhead maintenance work, is available directly from the Ven Corp., or you may use the Post Card on the colored page in this section. Circle No. 891.

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Swimming Pools

Tower Swim Pools for outdoor or indoor installation are modern in design and scientifically constructed. A positive guarantee is provided against leaking, cracking or structural defect — the first cost is in effect a final cost. Most important — only an occasional coat of paint is required to maintain a Tower All Steel Pool.
HOTELS, SCHOOLS, PLAYGROUNDS, INSTITUTIONS, COUNTRY CLUBS.

Consult us today!

TOWER IRON WORKS
80 BORDEN ST., PROVIDENCE 3, R. I.
Please send information on your New ALL STEEL Swimming Pools.

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Snow Plow Attachment For Michigan Tractor Shovels

A new snowplow attachment for all models of Michigan tractor shovels has a strong hydraulic lift for breaking up compact and crusted snow drifts. The new plows feature cutting widths ranging from eight feet, for the Model 75, to nine feet for the Model 175. They are quickly attached, at four points, in 30 minutes or less.

The plows range in weight from 1,850 to 3,400 pounds and have adjustable ground shoes and replaceable cutting edges. They are easily raised clear of drifts, and may be agitated to cut more quickly through heavily packed snow drifts. Large-size tires and a short turning radius provide the tractors with increased traction and maneuverability.

Detailed information on the Michigan tractor shovel with new snowplow attachment may be obtained from the CLARK EQUIPMENT CO., CONSTRUCTION MACHINERY DIV., 416 SECOND ST., BENTON HARBOR, MICH. Write directly, or you may use the Post Card located for your convenience on the colored page ing this section. Circle No. 912.

Agitated plow cuts quickly and easily through heavily packed snow drifts.

Speed of a welterweight, punch of a heavy —

THE CHALLENGER DeLUXE

is a fighter — a Fire Fighter

Here is a new concept in fire fighting . . . the Challenger . . . apparatus that gets there fast and delivers a knockout punch. It carries its own water supply and can get into action pronto. The Sharpsville Challenger is the only quality fire apparatus built to your own needs. It has years of experience behind it in engineering, construction and knowledge of what a fire department needs.

You should see this Oklahoma job . . . it is a Challenger Deluxe, and a dandy. Any chief would be proud to have it. Write for new bulletin CL, describing the Sharpsville Challenger Deluxe.

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STEEL FABRICATORS, Inc.
Sharpsville, Pa.
Established 1911 Incorporated 1917

Builders of Service, Crash & Ladder Trucks • Volume & High Pressure Pumpers • Squad & Emergency Cars • Storage Tanks

Hammond Iron Works Plans Expansion

The Hammond Iron Works of Warren, Pa., and Henry Sears & Co., of New York City, have reached a tentative agreement regarding the formation of a new company, according to a recent announcement. The new firm, as yet unnamed, will carry on and expand the present business, products and facilities of the Hammond Iron Works.

According to Hammond officials, the new company will be built around the present Hammond personnel, organization and facilities and will be augmented to provide greater service in the petrochemical, processing, water-works and utilities fields. Hammond plants are now located in Warren and Bristol, Pa.; Birmingham, Ala.; Provo, Utah; and Casper, Wy.

Those Veon Lines

Atlanta, Ga., will lay 28,000 feet of 4-inch Veon crosswalk lines at school and downtown crossings. The "Veon" is applied by a one-man machine. Traffic Engineer Karl Bevins says that it should outlast painted lines by at least five to one. In fact, this is the guarantee of the VEON CHEMICAL CORP., a subsidiary of the BROADWAY MAINTENANCE CORP., 22-09 BRIDGE PLAZA NORTH, LONG ISLAND CITY 1, N. Y., originators of the new compound as well as the method of applying it.

More than 40 other cities in the Southeastern part of the country are getting

ready to install "Veon" crosswalk lines, according to Jason D. Radding, sales manager of Veon Chemical. In the Northeast, New York City will lay school crosswalks at 1,178 crossings.

New "Veon" traffic line compound is reported to outlast paint five to one.

Besides outlasting paint five to one, "Veon" dries almost instantaneously on contact with the street surface. It will not discolor, and tires passing over the line rub off dirt.

The equipment to lay "Veon" lines is leased. A panel truck, a "Volkswagon" (a German type of station wagon), and a small trailer have been fitted up for the same type of work as distributors and contractors will do.

While standard equipment on the machine for applying "Veon" lines permits the laying of standard 4-inch lines, there are simple dies available that facilitate the laying of lines up to six inches wide. Equipment is also available for laying accurate, clean-edge lines on cobblestone. "Veon" comes in white, yellow or red.

The Veon Chemical Corp. will supply full information on long-lasting "Veon" traffic lines. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 905.

Ludlow to Manufacture Rensselaer Valve Line

Acquisition of the complete product line, patents, inventories and business of the Rensselaer Valve Co., Cohoes, N. Y., by The Ludlow Valve Mfg. Co. of Troy, N. Y., is announced by Oliver F. Gang, president and general manager of the Ludlow firm, and Lyman C. Thunfors, president and general manager of Rensselaer. The recent purchase brings together, under one management, two of the oldest manufacturers of quality valves and fire hydrants used in the municipal water-works field and in the oil and gas industries.

According to Mr. Gang, valve production will continue at the Rensselaer plant for "some months," until all Rensselaer equipment can be transferred to the Ludlow shops at Troy. Ludlow will then proceed to manufacture the entire line of Rensselaer products. Production, reports Mr. Gang, will continue as usual, and the Rensselaer sales organization will remain substantially the same.

By consolidating the facilities and personnel of the two companies, Ludlow expects to achieve a broadening of research activities, more intensified product development, an increased manufacturing efficiency and a greater economy of operation. In addition, the larger volume of business will permit the more efficient use of costly machine tools and foundry equipment.

NOW! ECHELON SPREADING
for more efficient ICE CONTROL . . . with
HI-WAY
Model "J"
SPREADER!
Model DD
Model DD Tailgate Spreader—a popular model with many highway departments, cities, counties, and municipalities, and is used all over the world.
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Model E Spreader is available in choice of 3 drives: power take-off, motor driven, hydraulically driven. Adaptable to all make and model trucks.
Write for full information and your HI-WAY dealer's name.
• Forward and reverse spreading
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• No free flowing—eliminates waste
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• Quickly attached and detached
• No controls to install in truck cab
• Simple to operate
• Built to fit and interchange on any width dump body
• Overall width less than 8 feet
• Attached to truck frame, allowing dump body to operate properly
HIGHWAY EQUIPMENT CO., Inc.
616 D Ave., N.W., Cedar Rapids, Iowa
"World's most complete line of Spreaders"
MODEL E
MODEL W
MODEL R
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KEEP in STEP!

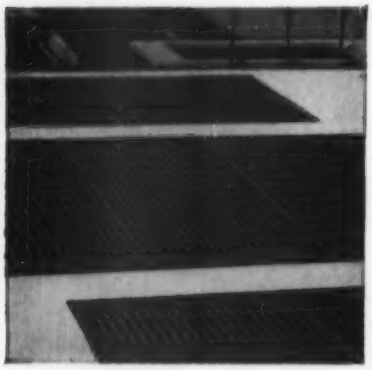
. . . Take Advantage of

SAFETY, ECONOMY, DURABILITY,

Every Step of the Way.

...CHOOSE IRVING GRATINGS

You're on SURE FOOTING with Versatile IRVING RIVETED, WELDED OR PRESSURE-LOCKED OPEN MESH FLOORING . . .



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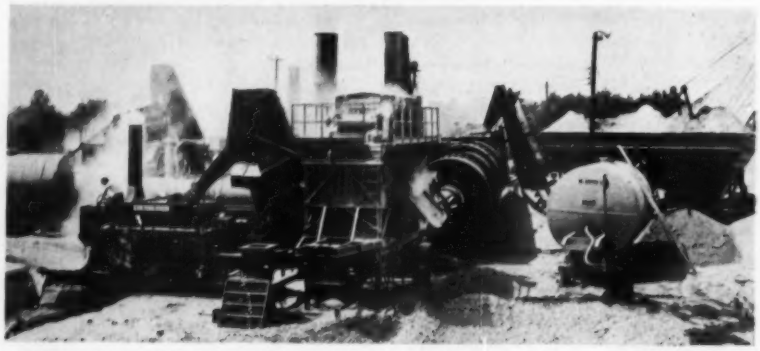
1856 10th St., Oakland 20, California

Purchasing News

New Asphalt Plant Proves Its Effectiveness



A Barber-Greene 200 tph, continuous-mix asphalt plant at work on the Garden State Parkway near Woodbine, N. J. It is backed up by a standard B-G Model 848 plant.

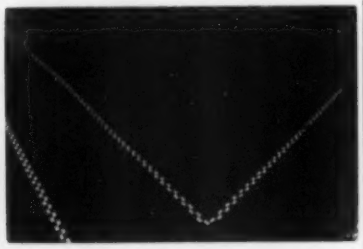
A new 200-ton-per-hour, continuous-mix portable asphalt plant has exceeded expectations in both capacity and portability, according to the BARBER-GREENE CO., AURORA, ILL. Five of these large plants have been operated in areas as widely separated as New Jersey and Minnesota, and on materials ranging from single aggregate bituminous base course mix to high-type asphaltic concrete surface material.

Working on the Garden State Parkway at Woodbine, N. J., a B-G 200-tonner was operated back-to-back with a standard Model 848 plant, with both plants being fed from common stockpiles of aggregate. While the regular B-G plant turned out some 114 tph of sand-gravel mix, the 200-ton plant operated consistently on the rigid, New Jersey high-type, close tolerance F.A.B.C. material at 185 tons per hour.

A 200-ton asphalt plant towed some 350 miles from the Barber-Greene fac-

SALES AGENTS!

Here could be an excellent addition to your line of traffic supplies. Our expanding sales policy opens a few territories for reputable firms or individuals who sell to municipalities.



Product is well-known, permanent-type, thermoplastic TRAFFIC MARKER used to form lane lines, crosswalks, and similar pavement marking. Low in cost, easily installed, prompt shipments. Over 20 years' favorable acceptance by city and state traffic officials.

In writing, please state area regularly covered, other lines handled, and name of your bank.

•

ARMOR FLEX

6969 Amherst Ave., St. Louis 5, Mo.

(City officials—Clip and mail to a friend who might be interested)

UNDERGROUND PIPING JOBS DONE IN LESS TIME AT LOWER COSTS

Here's the quick, simple way to install pipe under streets, walks, tracks, floors and lawns. With a GREENLEE Pipe Pusher *one man* pushes pipe *under* obstacles. No tearing up concrete, lawns, floors. Eliminates extensive ditching . . . no tedious tunneling, back-filling, repaving. Cuts job time to a fraction . . . GREENLEE Pipe Pusher often pays for itself on first job. Get facts today.

GREENLEE

Greenlee Tool Co., 2022 Columbia Ave., Rockford, Ill.

tory in Aurora to Currie, Minn., produced over 111,000 tons of bituminous mix in 556 working hours for an all-season average of about 200 tph. During this time the entire plant was moved five times, and no move took more than two days from the time the plant stopped until it resumed operations.

The mainspring of this 200-ton plant is a B-G Model 848 twin-shaft pugmill mixer. The company has also developed the Model 838 Dryer which achieves a 200-tph capacity with a 9-foot-diameter drum. Like the mixer, the dryer is mounted on rubber tires and equipped for semi-trailer towing.

Additional information on the Barber-Greene 200-ton-per-hour continuous-mix plant may be obtained directly from the manufacturer, or take advantage of the Post Card on the colored page in this section. Circle No. 915.

Detachable Front-End Loader

Versatility again is the keynote of this tractor accessory. The Johnson Model 1080 industrial loader can transform a Fordson "Major" wheel tractor into a handy, rugged, front-end loader or backfiller.

The attachment permits the tractor to do duties such as bulldozing; stripping of topsoil, sand or gravel; loading or excavating. It can be equipped with a 4-foot material bucket, supplied with tines to make easy penetration into the material to be handled if necessary. It can also be equipped with a 6-foot bulk material bucket for handling loose, bulky material. Or it can carry a dozer blade 24 inches high and 72 inches wide. In addition, it can mount an 8-foot boom, truss braced, that will lift over 1,500 pounds to an 18-foot height, making it ideal for setting poles, loading machinery, lifting material to a scaffold, placing beams and other duties.

The tractor attachment is manufactured by JOHNSON HYDRAULIC EQUIPMENT CO., 515 W. 78TH ST., MINNEAPOLIS 23, MINN. A new brochure is available showing in detail how the combination loader works. For your copy, write directly to the company, or you may use the Post Card on the colored page in this section. Circle No. 896.

Engineer/Borough Manager Wanted

by the Borough of Middletown, Pa., to supervise Sewerage Department and Highway Department. Water negotiations now under way for acquisition of privately owned water system by the Borough.

Some experience in the engineering field is necessary. Attractive salary to the right man.

For further information, contact

Chas. B. Force,
Borough Secretary
Middletown, Pa.

or

Joseph Nissley,
Borough Solicitor
Livergood & Nissley
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Standard Badges Since 1879

Write for catalog illustrating badges for Police, Fire and other City, County and State Officials

John O. Veit, Pres.

The C. G. Braxmar Co., Inc.
216 E. 45th St., New York 17, N. Y.

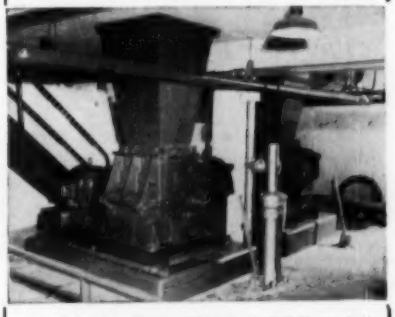
SINCE 1885

GRUENDLER

The Choice of Municipal Plants

25 Sewage Shredder Installations IN 1954

Coney Island, N. Y. Sewage Works
Kimball, Nebraska
Bedford, Virginia
Cleveland, Ohio, Hopkins Airport
Brooklyn, New York
White Bear Lake, Minnesota
St. Petersburg, Florida Airport
Houston, Texas
Albuquerque, New Mexico
Villa Park, Ill., Drainage Basin
Clear Lake, Iowa
Wichita, Kansas T.W.A.
Lexington, Virginia
Provo, Utah
Montgomery, Alabama
Camden, New Jersey
U.S. Army, Ft. Bliss, Texas
Mankato, Minnesota
Charlestown, Mass., Pumping Sta.
New Bedford, Massachusetts
Waco, Texas
Henderson, Kentucky



Two Gruendler Sewage Shredder Installations, Port Huron, Michigan.

GRUENDLER
SEWAGE — GARBAGE SHREDDERS

Disintegrates waste, including rag stock, for continuous uninterrupted flow.

BULLETIN S.G.10 mailed on request

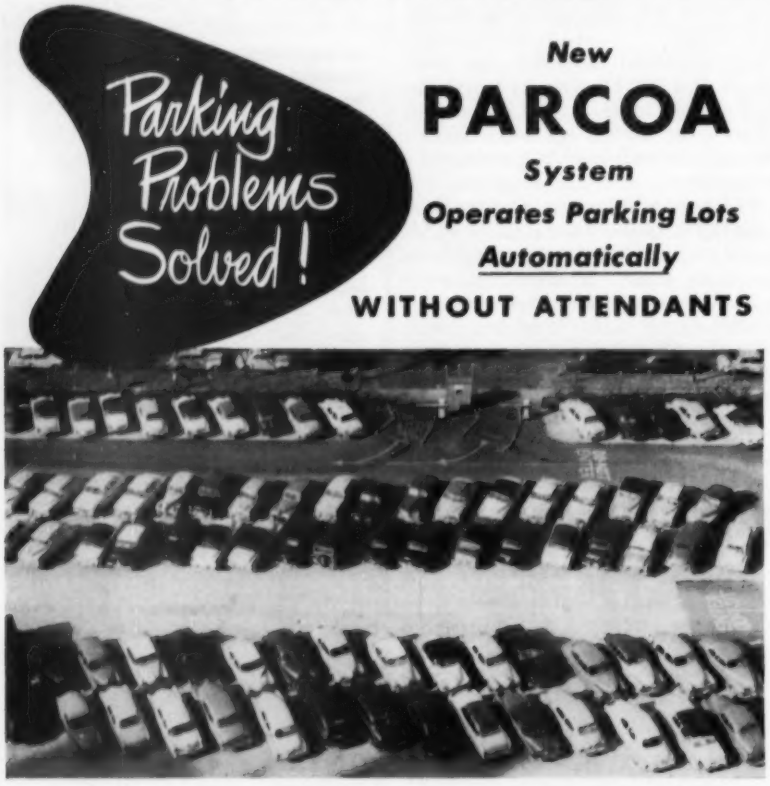
GRUENDLER
Crusher & Pulverizer Co.
2915 North Market, St. Louis 6
Dept. AC2 Missouri

Improved Front-End Tractor Loader

MID-WESTERN INDUSTRIES, INC., 1009 S. WEST ST., DEPT. A, WICHITA, KANS., has improved the Davis front-end tractor loader to include double-strength lift arms, a down pressure on the lift rams for greater utility in excavating and maintaining grades, and a new rubber mounting. This mounting minimizes the shock load on the front of the tractor, while shock slots transfer the thrust to the rear. Moreover, the 1955 model features a centralized reservoir which provides a clean hydraulic system. It retains its functional design, permitting all-around vision without obstructions.

The new Model 101 series of Davis loaders is designed to fit 2-3 plow tractors, while the Model 102, with twin dump cylinders, fits 3-4 plow tractors. A variety of attachments are available, including a handy scarifier for ripping hard surfaces.

Additional data on this improved front-end tractor loader may be obtained directly from the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 895.



New
PARCOA
System
Operates Parking Lots
Automatically
WITHOUT ATTENDANTS

Now you can solve parking problems in your community . . . relieve congestion . . . provide revenue . . . and do it automatically, without attendants.

The amazing new Parcoa system does the job safely, economically and dependably—without attendants. A simple electrical mechanism controls entrance and exit gates, actuated by card-keys* issued only to authorized holders.

Parcoa equipment is low in first cost. Easy to install. Requires minimum maintenance. No attendants needed. No help problem. Coded card-key can be changed as desired.

Write today for illustrated brochure and name of nearest distributor. Technicolor sound film available for special showing to your group.

*Your choice of controls (coin, card or any combination) makes this system readily adaptable to your requirements.

PARCOA
PARKING CORPORATION OF AMERICA
Division of Johnson Fare Box Company
4619 North Ravenswood Avenue, Chicago 40, Illinois
Sales and Service Offices in Principal Cities listed under BOWSER, Inc.

Price Brothers Wins "Best of Industry" Award

Harry S. Price, Jr., executive vice-president of the Price Brothers Co., displays the "Best of Industry" award for 1953-54.

The recent Direct Mail Advertising Association (DMAA) Convention in Boston, Mass., saw the "Best of Industry" award go to PRICE BROTHERS CO., 1835 E. MONUMENT AVE., DAYTON 1, OHIO, for the best direct mail advertising sent to engineers during 1953-54. This is the third DMAA award the company has won in the last four years for its outstanding direct mail campaigns on concrete pressure and sewer pipe.

Judges at the DMAA Convention based their decision on the sales letters, technical literature and manuals on Price pipe, and the inquiry answering system maintained by the company for furnishing product literature.

Portable Electric Saw

Use the new Syntron portable electric saw to cut wood, stone, concrete tile, brick, and other construction materials. The Model 52B weighs 20 pounds and, with a 10-inch-diameter blade, has a maxi-

mum cutting capacity of 3¼ inches. It can be adjusted to cut from 1½ to 3¼ inches deep, and provides angle cuts from 90° to 45°.

The Syntron electric saw is powered by a 1½-hp motor which drives the 10-inch blade at 4,000 rpm under load—cross cutting or ripping in hard or soft wood. A new flat belt drive eliminates the costly repairs and replacements necessary with an ordinary gear drive.

The complete Syntron outfit consists of a Model 52B saw, combination blade, blade wrench, and 15 feet of conductor cable. Optional equipment includes a sturdy metal carrying case.

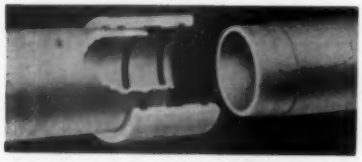
Further information is available from the SYNTRON CO., 430 LEXINGTON AVE., HOMER CITY, PA. Write directly, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 906.

Appoints New Dealers

G. F. DeCoursin, vice-president in charge of sales for The Four Wheel Drive Auto Co., Clintonville, Wis., announces the appointment of three new dealers to handle the company's line of four and six-wheel drive heavy-duty trucks. These include the Bolan Truck and Equipment Co., 1605 West Galena, Milwaukee, Wis.; the Public Works Equipment Co., Inc., 231 Central Bridge St., Wausau, Wis.; and the Macdonald Equipment Co., Inc., 1068 Santa Fe, Denver, Colo.

In addition, Four Wheel Drive has appointed a new public relations counsel, the Lawrence H. Selz Organization, of Chicago, Ill.

New Coupling for Transite Building Sewer Pipe



New Ring-Tite coupling protects against line clogging due to root penetration.

Transite building sewer pipe, an asbestos-cement pipe for connecting homes with street sewers or septic tanks, is easily installed with these pre-assembled Ring-Tite couplings.

The new coupling consists of a sleeve of Transite containing three rubber rings —a T-shaped middle ring and round outer rings. These rings are positioned with their retaining grooves at the factory. As the pipe ends move into the coupling, the outer rings are compressed for a tight, leak-proof joint. The T-shaped middle ring forms a seal between the pipe ends, eliminating offsets and providing a smooth, continuous flow.

Only two steps are required for assembling the new coupling. A specially prepared Johns-Manville soap lubricant is applied to a pipe end, and the Ring-Tite coupling is placed against it and pushed home by hand. The other pipe end is lubricated, placed next to the coupling, and pulled home by hand. The entire operation is completed very quickly.

The new Ring-Tite coupling and a complete line of similarly designed adaptors and fittings are available from JOHNS-MANVILLE, BOX 60, NEW YORK 16, N. Y. For complete information, write directly to the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 909.

For a Trouble-Free Installation . . .

use HAYS

MODEL B TAPPING MACHINE

CORPORATION STOP

ROUNDWAY CURB STOP

These three outstanding HAYS products team up to give you more service connections per day, week, and month.

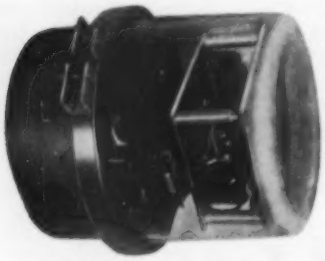
The HAYS Model B Tapping Machine, now made of aluminum alloy, is one-third lighter, easier to handle, easier to operate . . . really designed for "the man in the ditch."

Check the HAYS catalog for the complete line of Corporation and Curb Stops conforming to all A.W.W.A. Standards. Write us for a copy or see your HAYS distributor.

Water Departments all over the country have been using HAYS Water Service Products for over 80 years.

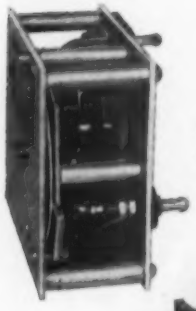
HAYS
WATER WORKS PRODUCTS
HAYS MANUFACTURING CO.
ERIE, PA.

TIME-O-MATIC FLASHERS JACK MOUNTED

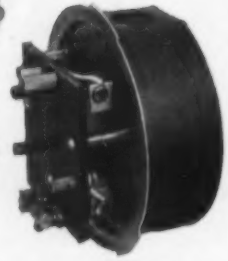


Time-O-Matic Jack Mounted Flasher in Standard Meter Case

Single or two circuits, every model with built-in eliminators. Available with standard meter case (above) or separately with Jack mounting panel (below).



Time-O-Matic Jack Mounted Flasher Only



Time-O-Matic Jack Panel in Meter Case

SPECIFY DEPENDABLE TIME-O-MATIC

↓

"A Sign of Good Control"

•

TIME-O-MATIC CO.

1108 Bahls Street

Danville, Illinois

Purchasing News

How to Drain a Hydrant in 60 Seconds

It takes only 60 seconds to drain a fire hydrant with the new "One-Minute" hydrant jet drain available from the ELLIS & FORD MFG. CO., FERNDALE 20, MICH. The device is powered by a 6-volt motor and air compressor connected to the battery of a service car, truck or tractor. Here is how it operates:

A hose, connected to the patented jet drain fitting, is inserted in the water port of the hydrant to reach the bottom of the hydrant barrel. The fitting is then placed in position on the hydrant, and tightened by hand. Finally, the air jet valve is plugged in, and water is completely expelled from the hydrant in one minute.

The new hydrant jet drain is designed to fit any size hydrant. In addition to draining hydrants, the compressor may be used to inflate tires, spray paint, and for a variety of lubricating operations.

Additional information is available directly from the Ellis & Ford Mfg. Co.,or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 899.

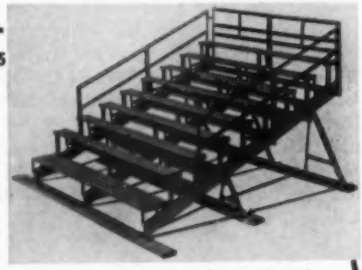
Asphalt Institute Moves to Maryland University

After 35 years with headquarters in New York City, The Asphalt Institute is moving its executive offices and laboratories to the campus of the University of Maryland, according to J. E. Buchanan, president. The Institute's new national headquarters will be located on the university campus at College Park,

Ironworkers HUSSEY SAFE SEATING Since 1835

PORTABLE SEATING FOR EVERY OCCASION

With Hussey Patented Portable Steel Bleachers and Grandstands, one set of seats will take care of both your indoor and outdoor needs. They cannot collapse and can be erected and taken down faster and easier than any other stand on the market. Low in cost. 6, 10 and 15 tier 12 foot sections in stock. Other sizes to order. NEW! Hussey enclosed deck "ROLL-OUT" GYM SEATS.



Single Section—Model 8 Grandstand

Write for FREE catalogs on all Hussey products

Hussey Mfg. Co., Inc. • 556 R.R. Ave. • N. Berwick, Me.

Also Mfrs. of Water Sports Equipment, Flag Poles, and Misc. Iron.

got ears? EARS?

BE ON THE CONSTANT ALERT

All Departments Can Now Listen to Every Vital Message

MONITORADIO for a thoroughly coordinated 2-way communication system.

Now every member of every department can have radio communication for as little as $49.95

Write today for further information.

- Nation's most complete line of monitor receivers.
- Crystal controlled or tunable for any VHF FM communication system.
- Mobile or stationary receivers.
- Prices to meet any budget.
- Certified for civil defense use.

MONITORADIO RADIO APPARATUS CORPORATION

7900 Pendleton Pike, Indianapolis, Ind. Phone: CHerry 2466

near the outskirts of Washington, D. C.

Concurrent with the transfer of national headquarters, reports Mr. Buchanan, the Institute's division office in Washington will be closed, and a new division office will be located at 1270 Avenue of the Americas, New York City.

New York personnel moving to College Park, in addition to President Buchanan, include A. S. Wellborn, chief engineer; J. M. Griffith, engineer of research; R. C. Dresser, acting director of the department of information; C. A. Mayer, office engineer; and J. E. Hittle, assistant engineer of research. G. H. Dent, division engineer in Washington, will join the College Park staff as assistant chief engineer.

Portable Air Compressor

In addition to its line of "Blue Brute" reciprocating type compressors and "Blue Brute" air tools, the Portable Compressor and Contractor's Tool Division of the WORTHINGTON CORP., HARRISON, N. J., is offering a new rotary air compressor for the municipal construction field. This portable unit is designed with a hydraulically operated clutch that lets the engine warm up before the compressor is cut in. It features a patented interlocking control valve on the clutch for easier cold-weather starting.

An important advantage of the new rotary compressor is its easy accessibility for inspection and maintenance. If necessary, an unskilled mechanic can make a quick blade replacement in the field without special tools.

The lightweight compressor is easily transported from job-to-job. A low-set fuel tank provides for safe, easy filling, and a separate oil reservoir and air receiver permit better oil control and a larger air storage capacity.

The new rotary compressor is now available in a 315 cubic-foot capacity with additional sizes to follow. For complete information, address the manufacturer directly, or use the Post Card in this section. Circle No. 904.

NEW CATALOG!

MUNICIPAL SUPPLIES

No. 152

ESTABLISHED 1909—47 YEARS OF SERVICE

W.S. DARLEY & CO.

CHICAGO 12 ILLINOIS

WRITE TODAY
For
100 PAGE
MUNICIPAL CATALOG

W. S. DARLEY & CO.
CHICAGO 12

POWER
PLANT
SUPERINTENDENT

Desires
Position

Experienced in diesel and hydroelectric stations here and abroad, now employed in Colorado, seeks charge of diesel plant in the east.

Age 37.

Write:

Box 384
American City Magazine
470 Fourth Avenue
New York 16, N. Y.

KOHLER Electric Plants
provide time-saving,
on-the-job electricity!

MODEL 1.5MS, *1500 watts, 115 volt DC. Manual starting. Weight 101 lbs. Handles for carrying. Also 115 volt AC, 130 lbs.*

Kohler Co., Kohler, Wisconsin • Established 1873

Save time with low-cost electricity at the spot where the work is done! Compact, portable model operates chain saws for pruning and for disposing of fallen trees after storms; also operates hedge trimmers, grass shears, carpenters' saws, drills, pipe threaders and cutters.

Other models, 500 watts to 35 KW, for trucks, street repairs, police and fire departments, civil defense units. Also automatic stand-by models to protect hospitals, sewage treatment and filtration plants, communication systems, schools, public buildings, when central station service is cut off. Write for folder A-21.

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

Oakland, Mich., Incinerator Uses Special Windows

One of the most interesting refuse incinerating plants in the country was designed by Greeley and Hansen, Chicago engineers, recently, for the Southeastern Oakland County Garbage and Rubbish Authority, Royal Oak Township, Mich. This attractive building is faced with Walcon Aluminum "S" panels and features some 2,700 feet of Pennsylvania corrugated wire glass windows.

In small plants such as the Oakland installation, the special corrugated wire glass windows offer an efficient solution to lighting problems by providing a maximum diffusion of light. Combined with the aluminum side walls, they make up an exterior that requires a minimum amount of maintenance.

Corrugated wire glass is a product of the PENNSYLVANIA WIRE GLASS CO., 1612 MARKET ST., PHILADELPHIA 3, PA. For complete information, write directly to the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 889.

The 2,700 feet of corrugated wire glass windows provide the new incinerating plant with a maximum diffusion of light.

Proved performance over long periods and under varying conditions is the best test of any product. Unique in engineering annals is the long record of economy and efficiency of permanent cast iron pipe in water mains and gas lines.

Cast iron water mains installed in 1664 by Louis XIV to supply the town and parks of Versailles, France are still functioning after 290 years of service. America's oldest cast iron water main, laid in Philadelphia in 1821, is still giving satisfactory service. Sixty American communities have cast iron water or gas systems a century old.

No other type of pipe has behind it this long, distinguished service record. That's why cast iron pipe is first choice of American municipal engineers for new installations and extensions to existing systems.

* * * * * *

Our Company does not manufacture pipe but has long supplied the nation's leading pipe manufacturers with quality iron from which pipe is made.

WOODWARD IRON COMPANY

WOODWARD, ALABAMA

New Machine for Line Marking Jobs

New Jawco Model 500 handles three types of line marking jobs efficiently.

Place the Jawco applicator brush on the left side of the Model 500 Traffic Liner, and the unit will mark diagonal parking lines right out from the curb. Transfer the brush to the right side of the machine, and the Model 500 marks clean, straight center lines. A special attachment enables the unit to mark municipal athletic fields and clay tennis courts with whitewash lines.

The Weaver Machine Co. has placed a 5-gallon tank between the handles of

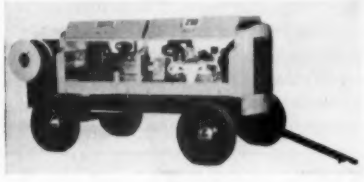
the new traffic liner, increasing the flow of paint or whitewash. An adjustable stop on the flow-control lever permits just the right amount of liquid to flow into the applicator brush.

Weighing some 45 pounds, the Jawco Model 500 liner is 43½ inches high, 27 inches wide, and 33 inches long. It features an accessory box that can be used for storing brushes, solvent and chalk lines.

For complete information, write THE WEAVER MACHINE CO., P. O. BOX 1224, YORK, PA., or you may use the Post Card on the colored page in this section. Circle No. 888.

Low-Cost Air Compressor

A Chrysler Industrial 22 Engine powers the economical Model 230-P portable air compressor. The unit itself is constructed of another Chrysler Industrial 22 engine, converted so that all six cylinders compress air. It boasts a capacity of 230 cubic feet of air per minute at 100 pounds of pressure.



Included in the Model 230-P are oil bath air cleaners and disposable type full flow oil filters for keeping dirt and abrasives away from moving parts, an 11½-inch twin disc clutch which assures long life under severe conditions, and a 30-gallon gas tank. Spring-mounted pneumatic tired wheels with Timken bearings facilitate travel from job-to-job.

The Model 230-P portable air compressor is made by GORDON SMITH & CO., INC., 425 COLLEGE ST., BOWLING GREEN, KY. For full details, write the company directly, or you may use the Post Card on the colored page in this section. Circle No. 894.

Automatic Control Lowers Prices

The Automatic Control Co., manufacturers of control systems for water distribution, sewage treatment and industrial processing plants, announces an average price reduction of 9.4% under previous prices established in 1950. This reduction, reports L. H. Mogck, president of the firm, is the combined result of product simplification, improvements in engineering and manufacturing techniques, and an increased volume of business.

The company's research and development program, established in 1953, has already completed a significant contribution to the industry, according to Mr. Mogck. The contribution consists of a complete remote telemetering system, especially designed for water and sewage systems, that is capable of sending and receiving a number of proportional signals and control signals simultaneously so that automatic control plus recordings of conditions may be obtained.

THE AUTOMATIC CONTROL CO. is located at 1015 UNIVERSITY AVE., ST. PAUL 4, MINN. For information on the remote telemetering system, address the manufacturer directly, or you may use the Post Card on the colored page in this section. Circle No. 902.

HOW

BENNETT

WASTE RECEPTACLES

make Cleanliness automatic

In public buildings, outside on street corners, Bennett Self-Closing and Drop-in Waste Receptacles practically *eliminate the problem of unsightly and unsanitary papers and other trash.* By conveniently placing these waste receptacles to invite their use, cleanliness becomes automatic.

Messages stenciled on Bennett Self-Closing Waste Receptacles increase their use.

BENNETT SELF-CLOSING WASTE RECEPTACLES

BENNETT DROP-IN WASTE RECEPTACLES

- Stainless steel feet eliminate rusting
- All welded construction
- Smooth exterior surface
- Phosphate primed steel for corrosion resistance
- Baked on enamel finish

FILL IN AND MAIL COUPON TODAY

THE BENNETT MANUFACTURING COMPANY, ALDEN, NEW YORK AC-2-55

Kindly send to my personal attention catalogs on Bennett Waste Receptacles.

Name

Title

Municipality

Street

City State

you need CYCLONE FENCE!

When strong, sturdy Cyclone Fence is installed around recreation areas like this tennis court, it becomes relatively simple to exclude those persons who don't want to play according to the rules. With Cyclone Fence there's no chance to slip in unnoticed from the other side.

Cyclone Fence serves a multitude of fencing needs in cities of all sizes. It guards power plants and water reservoirs, it encloses parks, it protects children in public playgrounds and it confines animals at zoos—to mention just a few types of installations. No matter what your municipal fencing job, there's a Cyclone Fence just right to handle it.

You can buy cheaper fence than Cyclone, but it will cost you more per year. Nothing but brand-new, top-quality material is used throughout. Posts and top rails are heavy and rigid. Gates won't drag. The chain link fabric is woven from heavy steel wire and galvanized *after* weaving for resistance to rust and corrosion. And Cyclone is erected by full-time, well-trained experts—so that it will stay trim and good-looking.

NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE*

CYCLONE FENCE DEPARTMENT, AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS · SALES OFFICES COAST TO COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

*Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute.

USS CYCLONE FENCE

UNITED STATES STEEL

Purchasing

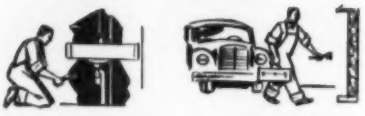
Haring to Direct Equipment Sales

Charles J. Haring

Charles J. Haring has been appointed director of equipment sales for the Westinghouse Air Brake Co., according to Edward O. Boshell, chairman of the board of directors and president of the firm. Mr. Haring will join the company's executive staff at Gateway Center, Pittsburgh, Pa. He is the former general sales manager of the J. D. Adams Mfg. Co., Indianapolis, Ind.

The newly-created post of equipment

Clogged Drains?



Saves Torn-up Plumbing — Saves on Outside Help

HYDRAULIC WATER RAM

(Can pay for itself in one application)

Enjoy 30 Day FREE TRIAL!

Why lose time, suffer inconveniences, waste dollars on needlessly costly plumbing service? The Hydraulic Water Ram clears severest blocked drain lines and sewers in minutes. No chemicals, no snakes, no electric cables, no pushing through. Saves costly outside help, or expensive torn up piping. Uses IMPACT, a basic scientific principle of POSITIVE HYDRAULIC POWER. Shatters hard grease, debris, other blockage into fragments easily flushed down to main. Works perfectly, *vent or no vent!* Services up to 6" pipe. Works perfectly on all types of clogged toilets, sinks, sewers, etc. Can pay for itself in a single application. Nothing to wear out. Good for a lifetime. Thousands in use, including over 3,000 in government agencies. You risk nothing. Write for details of how to get free 30 day trial at our expense.

Write for Information, Prices, Details of Free Trial Offer!

See Units Demonstrated At Booth 754
Plant Maintenance and Engineering Show

HYDRAULIC MANUFACTURING CO.

DEPT. AC-2, KIEL, WISCONSIN

sales director is another step in the company's diversification and expansion program, reports Mr. Boshell. The program was designed to develop, through the purchase of several companies, a group of major products and tools used in the construction and mining industries. These firms include the LeTourneau-Westinghouse Co., Peoria, Ill.; the LeRoi Div., Milwaukee, Wis.; the George E. Failing Co., Enid, Okla.; the Cleveland Rock Drill Div., and the Industrial Products Div., Wilmerding, Pa.

New Saw Attachment

Convert your Homelite Model 17 chain saw into an efficient clearing tool quickly and easily with this new, low-cost clearing attachment. Used to fell, buck and limb all small trees and saplings, the attachment is sufficiently light in weight to permit one-hand operation, leaving the other hand free to push trees over. One man operating the versatile unit can keep three men busy clearing up limbs and piling brush.

The jaw-grip spike of the new attachment permits plunge-bucking of logs right on the ground. The spike bites into the dirt and keeps the chain out of the dirt. As it takes the thrust of the chain, it prevents logs from rolling or spinning away.

Detailed information on the Homelite

A jaw-grip spike permits speedy plunge-bucking with the clearing attachment.

clearing attachment for the Model 17 chain saw is available from the HOMELITE CORP., 112 RIVERDALE AVE., PORT CHESTER, N. Y. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 898.

STRAIGHTEN IT WITH A Star

PARKING METER
POST STRAIGHTENER

With its 25-inch hydraulic stroke will straighten the worst bent post with a single set-up. Time-saving, fool-proof, effortless operating.

Write for further particulars

STAR JACK CO. INC.

420 Lexington Ave.
New York 17, N. Y.

For all Piping systems handling . . .

WATER
OIL
GAS
ACIDS
ALKALIES
and other fluids

WILLIAMS-HAGER
FLANGED
Silent
CHECK VALVES

Send coupon today for your copy of Bulletin 654! This bulletin gives complete details on these dependable Williams-Hager check valves and how they eliminate water hammer and other costly and annoying noises in all types of piping systems. Available in sizes for every service. Renewable working parts. Write today.

THE WILLIAMS GAUGE CO., INC.
148 Stanwix Stl., 2 Gateway Center
Pittsburgh 22, Pa.

Please send me a copy of Bulletin 654 on Williams-Hager Flanged Silent Check Valves.

NAME_____
TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE___ STATE_____

CHECK VALVES
THE WILLIAMS GAUGE CO., INC.
2 Gateway Center Pittsburgh 22, Pa.

WE HAVE NEW FIBERGLASS TRAFFIC and DIRECTION SIGNS

Lake Shore Markers, Inc.

P.O. Box 59
Erie 1, Pennsylvania
Telephone: 4-0189

WRITE FOR FREE CATALOG AND SAMPLE OFFER

$50,000

We can help your City or County also on Workmens Compensation as we are helping such counties as the County of Erie, N. Y.

If you are paying $50,000 or over for Public Liability (including Sidewalk) and are having

TROUBLE

We may be able to help you as we have helped such cities as Norwalk, Connecticut for 3 years and New Haven for 19 years.

For further information, write or telephone

ROBERT F. COLEMAN Inc. 79 John St., New York COrtlandt 7-2436

Purchasing

New Self-Closing Lids for Refuse Cans

The refuse containers used in parks, playgrounds and public lavoratories are easily converted into sanitary, self-closing units with the new Witt push-top lid. Designed for the complete line of Witt ash and garbage cans, these self-closing lids are constructed of 24-gauge Perma-Zinc sheet steel with an 8⅜-inch opening. They are available with outside diameters of 16, 18¾, and 20⅜ inches for 20-, 27-, and 33-gallon cans.

Lightweight Witt push-top lids fit snugly to the can and are easily removed. An inside tension spring keeps the lid firmly closed when not in use.

Full details on economical Witt self-closing lids are available from THE WITT CORNICE CO., 2139 WINCHELL AVE., CINCINNATI 14, OHIO. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 887.

Wayne Sweeper Company Plays Host to Governor

Included in the itinerary of Goodwin Knight (right), Governor of California, on his tour of Pomona's industrial plants, was a visit to the Wayne Mfg. Co., manufacturers of mechanical sweepers for cities and industry. Governor Knight was escorted through the Wayne plant by Charles M. Weinberg (left), president of the organization. Among those present were Mrs. Knight and Gil Wayne, vice-president of the Wayne Mfg. Co.

Davenport Fire Dept. Prepares for Emergencies

The City of Davenport, Iowa, increased its fire-fighting strength recently, with the purchase of a new, radio dispatched International Model R-306 fire

apparatus truck. This 169-inch wheelbase truck is powered by a 266-hp engine. It mounts a main pump capable of delivering 1,000 gallons of water per minute.

Delivered from the company's Emeryville (Calif.) Works, the new truck employs a set-back front axle for maneuverability and efficient distribution of

load. It mounts a variety of special equipment, including a 300-gallon booster tank, 200 feet of 1½-inch hose, 30 feet of 3-section aluminum extension ladder, a 12-foot roof ladder, and a booster reel with 200 feet of 1-inch hose under the rear of the truck.

The complete line of International fire apparatus trucks is described in literature from the INTERNATIONAL HARVESTER CO., CHICAGO 1, ILL. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 897.

Two Principal Planners Wanted

Major Middle-Atlantic State Authority. Salary range: $6,783—$8,520. Qualifications: College degree with major course work in planning, engineering, architecture, or landscape architecture, plus five years' experience in land planning and site planning, including three years in supervisory or advanced technical capacity.

Ability to supervise the work of five to seven land planners. Knowledge of detailed redevelopment procedures and subdivision layout desirable.

Write Box 386

The American City
470 Fourth Avenue
New York 16, N. Y.

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LOOK AT THESE PRICE SAVINGS! *

	SHOVEL	BACK HOE
MACHINE A	BANTAM 7 % LESS	BANTAM 9 % LESS
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* Price comparisons include basic machine, crane carrier or crawler mounting and complete attachment . . . see your Bantam Distributor for details on the above comparison! Similar price savings apply to other Bantam models — dragline, clamshell, pile driver, and lifting crane.

WHY PAY MORE for a machine which can't *earn more?!* BANTAMS lift 12,000 lbs. . . . move up to 100 cu. yds. of dirt per hour . . . work with 9 fast-change attachments to handle hundreds of jobs . . . mount on crawlers or crane carriers!

How can Schield Bantam be so competitive? Simply because we specialize in building *only one size* shovel-crane . . . and because we build *more of them* than anyone else, we are able to give you a constantly *better machine at a lower price!* For convincing proof, see your Schield Bantam Distributor or write today for more details! Do it NOW, before your spring schedules get underway!

WRITE TODAY FOR YOUR FREE KIT

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World's Largest Producers of Truck-Cranes and Excavators

Please send me my FREE KIT with special information on what the BANTAM will do for me.

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COMPANY _____

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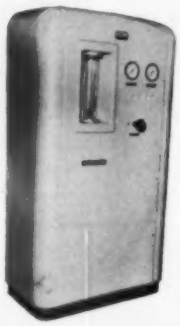
CITY _____ STATE _____

TYPE OF OPERATION PARTICULARLY INTERESTED IN: _____ C-7

High-Capacity Chlorinator

Enclosed in a corrosion-proof, polymer-impregnated fiber glass cabinet, this improved, high-capacity, solution-feed-type chlorinator requires minimum maintenance. A rate valve on the front of the cabinet provides manual adjustment of chlorine gas injection, and the actual flow rate is observed through the glass flow meter. Six metering tube and float combinations, interchangeable from the front of the cabinet, provide 10 to 1 or greater overlapping flow ranges from a minimum of 100 pounds per day to a maximum of 8,000 pounds per day of chlorine gas.

A number of automatic functions are available with each new chlorinator. These include automatic proportioning by a transmitted pneumatic signal from an orifice, venturi, or variable-area flow meter; automatic proportioning by mechanical connection to a float in a flume, weir or tank; remote pneumatic set; program-controlled operation, single, or multiple cam-operated; timer sequence control; automatic pump sequence control; and automatic start-stop control.



Descriptive material and specifications on the new, high-capacity chlorinator are available directly from the FISCHER & PORTER CO., 715 FISCHER RD., HATBORO, PA., or use the Post Card on the colored page in this section. Circle No. 910.

●TENNANT Sweeper cleans 48" path; replaces 3 to 12-man crew.

New Compact Machine Sweeps Gutters Walks and Alleys at 1/5 Usual Cost

BY SWEEPING congested areas with a new type power sweeper instead of pushbrooms, Akron, Cleveland and several other cities may save up to 80% this year in labor costs.

The new sweeper, shown at the APWA meeting in New Orleans last fall, is a compact heavy-duty machine. It cleans a 48" path and turns easily in a 5-ft. radius.

Its sweeping capacity is reported to equal that of a 3 to 12-man pushbroom crew.

Sweeps Cleaner Than a Crew

The sweeper has a powerful brush-and-vacuum system which eliminates need for water spraying or "wetting down." A rotating curb-brush sweeps leaves, dust and litter into main path of the machine.

A 36" brush, in a vacuumized compartment, throws dirt forward into an enclosed 9 cu. ft. hopper. Sweeping speed, with 2-speed transmission, is 1½ to 8 MPH.

Pays For Itself In 6 Months

The new sweeper has proved most successful in "mechanizing" whitewing work in special congested areas where big sweepers can't be used—such as gutters in downtown areas, walks, alleys, garages, driveways, etc.

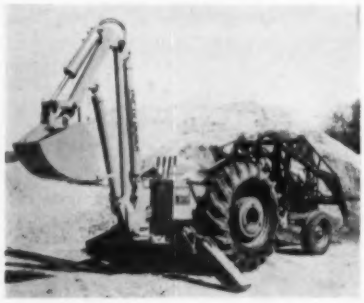
In such areas a single machine is said to pay for itself in 1 to 6 months.

Air terminals, auditoriums, piers and parking lots also can be swept most economically this way.

For details, please write or wire to the G. H. TENNANT CO., 2520 N. 2nd St., Minneapolis 11, Minnesota.

New Hopto Digger Mounts On Wheel-Type Tractors

Designed for mounting directly on wheel-type tractors, the new Model 80 RTM Hopto Digger is capable of digging up to 10 feet deep, and may be equipped with buckets 8 to 36 inches wide, featuring capacities up to ¼ yard. The unit swings a full 180°–90° to each side. It features built-in hydraulic outriggers, individually controlled, which permit the operator to level the machine without getting off of the tractor.



Complete mountings of the Model 80 are available for the Minneapolis-Moline RTI, the Fordson Major Diesel, the Oliver "77" Industrial, the International Harvester Super "C," the Power Horse "40," and the John Deere Model "60." A special RTM mounting kit may be obtained for other wheel-type tractors.

The Model 80 RTM is made by the BADGER MACHINE CO., WINONA, MINN. For additional data, write the company directly, or use the Post Card in this section. Circle No. 913.

What's Your Problem?

If you need information on any type of municipal service or equipment, these reply cards will get action in a hurry.

To THE AMERICAN CITY's Catalog Supply Department

Please send me further information on products described in "Purchasing News" section beginning on page 205 of your February 1955 issue, as circled below:

887	892	897	902	907	912
888	893	898	903	908	913
889	894	899	904	909	914
890	895	900	905	910	915
891	896	901	906	911	916

I would also like to receive manufacturers' booklets on .....

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Name: .....

Title: .....

Address: .....

..... 2-55

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THE AMERICAN CITY MAGAZINE

470 FOURTH AVENUE

NEW YORK 16, N. Y.

In A Jam?

You can obtain manufacturers' literature by making use of these convenient Business Reply Cards! A quick easy way to get full details on products and services mentioned or advertised in this issue.

To THE AMERICAN CITY's Catalog Supply Department:

Please send literature on items numbered as follows, starting on page 31 of your February 1955 issue:

571	577	583	589	595	601	607	613	619	625	631	637
572	578	584	590	596	602	608	614	620	626	632	638
573	579	585	591	597	603	609	615	621	627	633	639
574	580	586	592	598	604	610	616	622	628	634	640
575	581	587	593	599	605	611	617	623	629	635	641
576	582	588	594	600	606	612	618	624	630	636	642

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Assignment:
Take a picture of tomorrow!

What will be the face of your city tomorrow? Where will its streets, parks and residential areas be located? What will be the direction and design of its industrial growth?

AERO surveyors are taking off each day to find the answers to these and other city planning problems. For tomorrow's plans demand maps today . . . maps of precision accuracy, delivered with speed that comes only with air survey methods.

AERO's skilled team of flight crews, engineers and map-makers, working with highly complex instruments, produce maps for one-half the cost, or less, of ground survey methods. And they conserve the manpower of busy city engineering staffs. We have mapped cities like Cleveland, Philadelphia, Raleigh, N. C., and Ottumwa, Iowa. Let us show you how AERO can help advance your plans for tomorrow!

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About People

George L. Hudson, executive vice-president of the **Western Railroad Supply Co.**, of Chicago, Ill., has been elected president to succeed S. E. Gillespie, according to a recent announcement. Mr. Gillespie's retirement brings to a close nearly fifty years of service to the railroad industry.

G. L. Hudson

The **Line Material Co.**, of Milwaukee, Wis., announces a number of changes in its engineering and sales departments. Richard C. Kirk, formerly manager of Kyle products sales, succeeds Anthony F. Van Ryan as chief engineer of the Kyle plant. Mr. Van Ryan will continue to serve L-M as a new product consultant. Frank M. McStay has been advanced from apparatus engineer to manager of Kyle products sales. A new field engineer, John L. Barger, has been appointed for the company's East Central Division.

From E. B. Hill, vice-president in charge of sales for **Gar Wood Industries, Inc.**, Wayne, Mich., we learn of the appointment of A. F. Hoop as manager of the company's Los Angeles direct factory truck equipment sales branch. This branch markets Load-Packer refuse collection bodies as well as several types of special truck equipment.

Lowell E. Sennet, Chicago district sales engineer for **The A. P. Smith Mfg. Co.**, East Orange, N. J., will also represent the **National Water Main Cleaning Co.**, of New York City, according to a recent announcement. Mr. Sennet's sales territory will include the states of Illinois, Indiana, Wisconsin and Michigan.

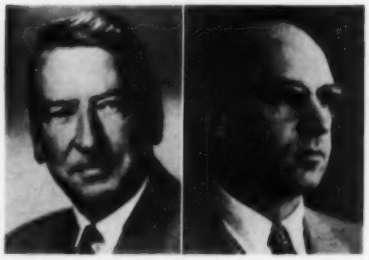
Caterpillar Brasil S. A.—Maquinas e Pecas, a new subsidiary of the **Caterpillar Tractor Co.**, located in San Paulo, Brazil, will be headed by Robert J. Loskill, reports Harmon S. Eberhard, president of the firm. Mr. Loskill has served as sales development manager at Caterpillar's Peoria (Ill.) plant. Other staff appointments to the subsidiary include John H. Smith, chief engineer; E. J. Sluetz, purchasing agent; W. R. Van Order, treasurer; B. W. Oedewaldt, parts manager; and Octavio Reis, buyer.

A new director is announced for **Frederic R. Harris, Inc.**, a firm of consulting engineers located in New York City. He is Julius E. Graf, formerly chief engineer for the Jones & Laughlin Steel Corp.

While C. G. Stupp will continue his work in technical research and development for the **Barrett Division, Allied Chemical & Dye Corp.**, New York City, he'll do so as a new vice-president, according to T. J. Kinsella, Division president. Mr. Stupp, formerly technical director for Barrett, joined the Division as a research chemist 38 years ago.

D. W. Onan & Sons Inc., Minneapolis, Minn., well-known manufacturers of electric generating plants, has appointed Carl Brady new sales zone manager for the states of Nebraska and South Dakota, and parts of Iowa, Kansas, Missouri and North Dakota. Mr. Brady will locate at the firm's Minneapolis office.

R. E. Kroeck has been appointed manager of manufacturing, and B. A. Robbins, manager of engineering, for the **Enterprise Division** of the **General Metals Corp.**, San Francisco, Calif.



R. E. Kroeck **B. A. Robbins**

Special awards for distinguished service records of exceptional length were presented to Charles E. Coleman and Leslie D. Quigley at a recent dinner held by the **De Laval Steam Turbine Co.**, of Trenton, N. J. Mr. Coleman, who is assistant chief engineer of the company's pump department, has been with De Laval for the past 39 years. Mr. Quigley, supervisor of pump and compressor design, joined the company in 1909.

At the **Joseph Dixon Crucible Co.**, Jersey City, N. J., H. E. Ehlers, Jr., has been appointed general sales manager; R. C. Brock, industrial sales manager; and D. C. McMillin, manager of the Pacific Coast District.

Davol H. Meader succeeds H. D. S. Chafee as advertising manager of **B-I-F Industries, Inc.**, Providence, R. I. Mr. Meader is the former assistant export sales manager for Proportioneers, Inc., a division of B-I-F Industries.

D. H. Meader

A new advertising manager, George B. Motheral, is announced for the **Hagan Corp.**, Pittsburgh, Pa. Mr. Motheral will manage the consumer and industrial advertising, sales promotion, and public relations programs for Hagan and its subsidiaries, Calgon, Inc., Hall Laboratories, Inc., and Buromin Co.

G. B. Motheral

When Don S. Permar takes over the newly created post of field sales manager for the **Le Roi Division** of the **Westinghouse Air Brake Co.**, Milwaukee, Wis., he will have overall responsibility in managing the Division's field sales organization, according to Jack E. Heuser, general sales manager for Le Roi. The Division handles the marketing of Westinghouse industrial compressors, Le Roi portable compressors and the Tractair, in addition to front-end loaders, concrete mixers, and heavy-duty gasoline engines.

Edwin J. Schwanhausser succeeds Hobart C. Ramsey as president of the **Worthington Corp.**, Harrison, N. J., according to a recent announcement. Mr. Ramsey has been elected chairman of the board of directors. The post of executive vice-president, formerly held by Mr. Schwanhausser, has been given to Walther H. Feldmann. Thomas J. Kehane is the company's new vice-president in charge of sales, and Charles A. Butcher has been named vice-president for planning. Worthington also announces the retirement of Clarence E. Searle as vice-chairman of the board. He will continue as a director. Clarence S. Wentworth has been appointed central region sales manager for the company.

Hobart C. Ramsey **E. J. Schwanhausser**

A new field engineer, Dave P. Gilbertson, has been chosen to represent the **Automatic Control Co.** in North and South Dakota, Minnesota, and Western Wisconsin. Located in St. Paul, Minn., the company manufactures custom engineered control systems for municipal water and sewage plants.

J. A. Abbott, president of the **Homelite Corp.**, announces the election of Richard C. McDonald as vice-president in charge of manufacturing, and Albert K. Newman as vice-president in charge of engineering. Homelite's main offices are located in Port Chester, N. Y.

(Continued on Page 230)

When John E. Wennogle assumes his

including valves and hydrants, in the Cin-

The Barber-Greene is easily adjusted to increase or decrease its normal laying width of 10 feet. Dual controls. Heated screed. Large receiving hopper. Complete thickness control of over-all width, center, or either side.

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PAVE with the tamper that compacts to uniform density.

PAVE with automatic leveling. **PAVE** with positive traction.

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WRITE for INFORMATION

descriptive literature . . . sound movies

cost studies . . . nearby job inspection . . . plant layouts

When John E. Wennogle assumes his new position as division sales manager for **Hubbard & Co.**, Pittsburgh, Pa., he will handle pole line hardware sales in New York, New England and parts of New Jersey. Mr. Wennogle last served Hubbard and Co. as New England district manager, a position that will be taken over by John J. McQueeney.

B. E. Engstrom, Midwest sales manager for the **Darling Valve & Mfg. Co.**, Williamsport, Pa., will be in charge of the company's new sales office at 30 N. LaSalle St., Chicago, according to a recent announcement. The company has also appointed a new representative, Lewis M. Poag, to handle sales of metal products, including valves and hydrants, in the Cincinnati area. Frank C. Zeis will handle Darling sales in St. Louis. Further news from Darling Valve informs us of the transfer of B. F. Marcin, sales engineer, from the New York City area to the firm's Pittsburgh office. Leon A. Hoffmeister, sales engineer, has been transferred to Darling's New York offices.

The appointment of Russell L. McKinley as field service manager of the Construction Machinery Division, **Clark Equipment Co.**, Benton Harbor, Mich., is announced by Clarence E. Killebrew, vice-president of the firm. Mr. McKinley was formerly service manager for the Browning Crane and Shovel Co.

IT HAS JUSTIFIED ITS CAPITAL INVESTMENT MANY TIMES OVER

This town of 6,000 people could not afford

A TRACTOR
AIR COMPRESSOR
BACKHOE
LOADER

So they brought in a PNEUMATRACTOR for a trial and refused to return it because

It loads sand in winter
Excavates for sewer and water main repairs
Breaks up frozen ground
Drills ledge rock, and
does dozens of other jobs

YOUR TOWN NEEDS ONE, TOO.

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CITY OF BATAVIA
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City Planning etc.

Starting Salary $6500.
$300 Annual Increment.

Population 17,000.
Fine Schools and Living Conditions.

Applicant must hold N. Y. State Professional Engineer's License or be eligible for one.

Write to City Clerk,
R. J. Fisher, City Hall,
Batavia, New York.

Manufacturer's Agent Wanted

— to sell nationally advertised equipment to sewage treatment and disposal plants. An excellent opportunity for an experienced man now calling on this field.

Give present lines, territory covered and experience in your reply.

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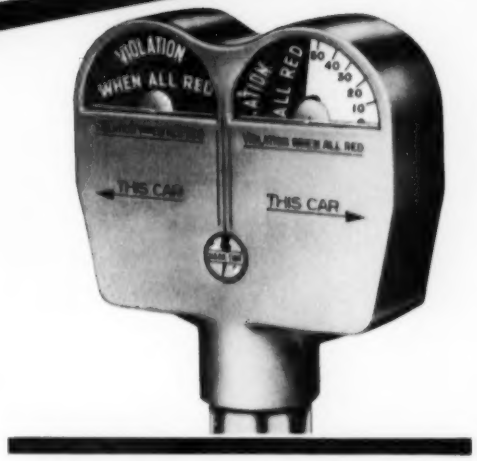

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To Every Part Its Proper Place . . .

How well chlorination equipment does its job depends not only on proper design but on the selection of the right parts and materials for every specific purpose.

The W&T equipment in the above installation is still giving good service after fifteen years. Every part in the equipment shown was designed specifically to meet a particular need. Mechanical diaphragms, first used by W&T in 1913, are here used for accurate control in the ammoniators. Puncture proof water diaphragms provide visibility and accessibility of control parts in the chlorinators. Both orifice and manometer type meters, and rotameters (furnished in W&T equipment as early as 1917), are employed here as best suiting the purpose for which each was intended.

Since 1913, W&T research has consistently sought out new designs, principles, and materials. Every new development is placed under rigid field tests to prove it can meet the exacting standards and practical limitations that dependable and economical chlorination demands.

When you depend on W&T equipment, you have the assurance that 40 years of experience in the chlorination field is being used to bring you the best in design, parts, and materials—selected and tested specifically to fit the need.

"Make Your First Choice Chlorination That Lasts"

WALLACE & TIERNAN INCORPORATED

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